

REVEAL**FP7-610928****REVEALing Hidden Concepts in Social Media**

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User Evaluation Report

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| Abstract: | This document provides information about the activities that took place during the course of the project for the evaluation of both REVEAL applications, the news and enterprise one, both from the end-user perspective (usefulness, usability, user experience, trustworthiness, etc.) but also from a legal perspective, in the sense that the two applications should be compliant to the current relevant framework. Findings, lessons learnt and recommendations are included in the respective sections' conclusions. |
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CONTENTS

| | |
|--|-----------|
| EXECUTIVE SUMMARY | 15 |
| 1 INTRODUCTION..... | 17 |
| 2 FORMATIVE EVALUATION - JOURNALIST APPLICATION..... | 19 |
| 2.1 USER EVALUATIONS GROUPS | 19 |
| 2.1.1 Background..... | 20 |
| 2.1.2 Use of social media for journalistic purposes | 20 |
| 2.1.2.1 Facebook most used..... | 20 |
| 2.1.2.2 Social media for promoting content | 23 |
| 2.1.2.3 Social media for research | 23 |
| 2.1.3 Verification in social media | 24 |
| 2.1.3.1 Verification in social media is potentially challenging | 24 |
| 2.1.3.2 Verification is engaging to some | 25 |
| 2.1.3.3 Little knowledge of services supporting the verification of social media | 26 |
| 2.1.4 Education concerning social media for journalistic purposes..... | 27 |
| 2.1.5 Feedback from the walkthrough of the application..... | 28 |
| 2.1.5.1 General remarks | 28 |
| 2.1.5.2 Streams..... | 28 |
| 2.1.5.3 Provide easy filtering options..... | 30 |
| 2.1.5.4 Streams to represent content from all social media services? | 30 |
| 2.1.5.5 Streams to present top content? | 32 |
| 2.1.5.6 Possible to exclude news agencies? | 33 |
| 2.1.5.7 Possible to include a translation service? | 34 |
| 2.1.5.8 Search criteria..... | 34 |
| 2.1.5.9 Easy overview of trending topics | 34 |
| 2.1.6 Stories..... | 36 |
| 2.1.6.1 The concept of stories is not immediately appreciated | 36 |
| 2.1.6.2 The concept of stories is not intuitive | 36 |
| 2.1.6.3 Failure to see the full benefit of stories | 36 |
| 2.1.6.4 Storing of social media content for reference | 38 |
| 2.1.6.5 Stories may be useful in cases of collaboration | 38 |

| | | |
|----------|--|----|
| 2.1.7 | Sharing stories with colleagues requires that the whole newsroom uses the REVEAL application | 39 |
| 2.1.7.1 | Challenging to have REVEAL adopted as a new publication platform | 39 |
| 2.1.8 | Verification | 39 |
| 2.1.8.1 | Verification appreciated as a supplement | 39 |
| 2.1.8.2 | Verification preferably involves the contacting of sources..... | 39 |
| 2.1.8.3 | Documentation of the verification process..... | 40 |
| 2.1.8.4 | Thorough verification process overkill in most situations | 40 |
| 2.1.8.5 | The challenge of time and resources | 40 |
| 2.1.8.6 | Who should do the verification? | 41 |
| 2.1.8.7 | Collaboration on verification requires trust in colleagues | 41 |
| 2.1.8.8 | Support for provenance analysis appreciated | 41 |
| 2.1.8.9 | Module of access to other images from the same date/location | 41 |
| 2.1.9 | Ethical concerns..... | 42 |
| 2.1.10 | Detailed comment on the mock-up – repeated visual elements were confusing during evaluation | 42 |
| 2.1.11 | Extended background discussions: Digital divides in the use of social media for journalistic purposes? | 42 |
| 2.1.11.1 | Only minor divides due to journalistic experience..... | 42 |
| 2.1.11.2 | Divides due to gender?..... | 43 |
| 2.2 | INTERVIEWS AND USER TEST WITH YOUNG JOURNALISTS | 43 |
| 2.2.1 | Social media practices among young journalists | 45 |
| 2.2.2 | The verification challenge | 47 |
| 2.2.2.1 | Lack of education | 47 |
| 2.2.2.2 | Verification and fact-checking services are not adopted by the newsrooms | 47 |
| 2.2.2.3 | Sceptical of verification services | 48 |
| 2.2.2.4 | Feedback on the REVEAL application | 49 |
| 2.3 | QUESTIONNAIRE SURVEY – JOURNALIST APPLICATION..... | 50 |
| 2.3.1 | Method | 50 |
| 2.3.2 | Experiences with social media and verification tools | 52 |
| 2.3.3 | Results - user evaluation | 54 |
| 2.3.3.1 | The stream monitoring feature | 54 |
| 2.3.3.2 | Overview of social media content..... | 55 |
| 2.3.3.3 | Image verification tool | 57 |

| | | |
|----------|--|-----------|
| 2.3.3.4 | Source verification..... | 58 |
| 2.3.3.5 | Verification board..... | 59 |
| 2.3.3.6 | Intentions to use REVEAL and trust in automatic verification | 60 |
| 2.3.3.7 | Usefulness | 60 |
| 2.3.3.8 | Trust..... | 60 |
| 2.3.4 | Conclusion formative evaluation – journalist application..... | 62 |
| 3 | FORMATIVE EVALUATION - ENTERPRISE APPLICATION | 65 |
| 3.1 | INTERVIEWS AND USER TESTS WITH ENTERPRISE WORKERS | 65 |
| 3.1.1 | Method and expected output | 65 |
| 3.1.2 | User groups and recruiting process..... | 66 |
| 3.1.3 | Prototype and scenarios..... | 66 |
| 3.1.4 | Usefulness, usability and user experience | 67 |
| 3.1.5 | The Scenarios..... | 67 |
| 3.1.5.1 | Innovation gathering scenario..... | 68 |
| 3.1.5.2 | Customer relation and support scenario | 68 |
| 3.1.5.3 | Newbies scenario | 69 |
| 3.1.6 | Results – user evaluation..... | 70 |
| 3.1.6.1 | Current working practices and opportunities | 70 |
| 3.1.6.2 | Different services..... | 71 |
| 3.1.6.3 | Facebook as a customer service outlet | 72 |
| 3.1.6.4 | Usefulness | 72 |
| 3.1.6.5 | Usability..... | 73 |
| 3.1.6.6 | User experience..... | 75 |
| 3.2 | QUESTIONNAIRE SURVEY – ENTERPRISE APPLICATION | 76 |
| 3.2.1 | Method | 76 |
| 3.2.2 | Experience with social media at work..... | 78 |
| 3.2.3 | Results - user evaluation | 80 |
| 3.2.3.1 | Stream monitoring | 80 |
| 3.2.3.2 | Stream content analysis | 80 |
| 3.2.3.3 | Top post analysis | 81 |
| 3.2.3.4 | Top users analysis..... | 83 |
| 3.2.3.5 | Overall view of the social media tools presented | 83 |
| 3.2.3.6 | Trust issues | 84 |

| | | |
|----------|---|-----------|
| 3.2.3.7 | Specific user need and suggestions..... | 85 |
| 3.3 | CONCLUSION FORMATIVE EVALUATION – ENTERPRISE APPLICATION | 86 |
| 4 | SUMMATIVE EVALUATIONS OF THE REVEAL-APPLICATIONS | 88 |
| 4.1 | METHOD..... | 88 |
| 4.2 | RESULTS JOURNALISTS APPLICATION..... | 90 |
| 4.2.1 | Social media at work and experience with verification tools | 91 |
| 4.2.2 | Results of summative evaluation - Journalists application | 94 |
| 4.2.2.1 | Social media monitoring..... | 94 |
| 4.2.2.2 | Filter content | 95 |
| 4.2.2.3 | Top users | 96 |
| 4.2.2.4 | Active Communities | 97 |
| 4.2.2.5 | The Influence feature | 98 |
| 4.2.2.6 | Community prediction..... | 99 |
| 4.2.2.7 | Sentiment analysis..... | 100 |
| 4.2.2.8 | Multimedia browsing | 101 |
| 4.2.2.9 | Multimedia filtering..... | 102 |
| 4.2.2.10 | Verification board..... | 103 |
| 4.2.2.11 | ThruthNest..... | 104 |
| 4.2.2.12 | Fake Post Detector | 105 |
| 4.2.3 | Intention to use and trust - Journalist application | 106 |
| 4.2.3.1 | Intention to use REVEAL – comparing sample 1 and 2 | 106 |
| 4.2.3.2 | Trust in automatic verification tools – comparing sample 1 and sample 2 | 106 |
| 4.2.4 | Conclusion summative evaluation – Journalist application | 108 |
| 4.3 | RESULTS OF ENTERPRISE APPLICATION | 109 |
| 4.3.1 | Social media at work and experience with social media insights tools | 109 |
| 4.3.2 | Results of summative evaluation – Enterprise application..... | 111 |
| 4.3.2.1 | Stream monitoring | 111 |
| 4.3.2.2 | Stream content analysis | 112 |
| 4.3.2.3 | Top Posts analysis..... | 113 |
| 4.3.2.4 | Top Users analysis | 114 |
| 4.3.3 | Comparing modules in the Enterprise application..... | 115 |
| 4.3.3.1 | Comparing usefulness across modules | 115 |
| 4.3.3.2 | Comparing ease of use across modules | 115 |
| 4.3.3.3 | Comparing "compelling" across modules | 116 |

| | | |
|----------|---|------------|
| 4.3.4 | Intention to use and trust | 116 |
| 4.3.5 | Conclusion summative evaluation – Enterprise application | 118 |
| 5 | LEGAL EVALUATION AND POLICY RECOMMENDATIONS..... | 119 |
| 5.1 | INTRODUCTION | 119 |
| 5.2 | LEGAL EVALUATION | 120 |
| 5.2.1 | REVEAL platform – compliance with legal requirements..... | 121 |
| 5.2.1.1 | Data controllership in REVEAL..... | 121 |
| 5.2.1.2 | Role of the REVEAL partners | 122 |
| 5.2.1.3 | Definition of applicable national legislation..... | 122 |
| 5.2.1.4 | Legal grounds for processing personal information in REVEAL | 124 |
| 5.2.1.5 | Providing transparent information..... | 125 |
| 5.2.1.6 | Compliance with the right to object..... | 125 |
| 5.2.1.7 | Collection of sensitive data | 125 |
| 5.2.1.8 | Removal of infringing content..... | 126 |
| 5.2.1.9 | Compliance with the API T&C..... | 126 |
| 5.2.1.10 | Appropriate use of the platform | 127 |
| 5.2.2 | Conclusion | 127 |
| 5.3 | POLICY RECOMMENDATIONS | 127 |
| 5.3.1 | Privacy and data protection | 128 |
| 5.3.1.1 | Reform of EU data protection rules | 128 |
| 5.3.1.2 | The right to erasure/ the right to be forgotten..... | 129 |
| 5.3.1.3 | Freedom of expression and the right to erasure | 130 |
| 5.3.2 | Intermediary liability | 132 |
| 5.3.2.1 | Review process..... | 132 |
| 5.3.2.2 | Private enforcement..... | 133 |
| 5.3.2.3 | Positive obligation to protect? | 135 |
| 5.3.2.4 | The need for appropriate safeguards..... | 138 |
| 5.3.2.5 | Ancillary copyright..... | 138 |
| 5.3.2.6 | Monitoring obligations | 139 |
| 5.3.3 | Media law and freedom of expression..... | 141 |
| 5.3.3.1 | Review of the AVMS Directive..... | 141 |
| 5.3.3.2 | Independence of national media regulators..... | 142 |
| 5.3.3.3 | Filter bubbles..... | 146 |
| 5.3.3.4 | Legal concerns regarding filter bubbles | 147 |

| | | |
|---------|---|-----|
| 5.3.3.5 | Fake news | 148 |
| 5.3.4 | API Terms & Conditions..... | 151 |
| 5.3.4.1 | API T&C in REVEAL..... | 151 |
| 5.3.4.2 | Digital Single Market Agenda | 153 |
| 5.3.5 | Conclusion | 155 |
| I. | APPENDIX – JOURNALIST AND ENTERPRISE APPLICATIONS: SUMMARY OF ISSUES AND SUGGESTIONS AND RESPONSES TO THESE | 157 |
| | ENTERPRISE APPLICATION: SUMMARY OF ISSUES, SUGGESTIONS AND PLANNED ACTIONS | 161 |

LIST OF FIGURES

| | |
|---|----|
| FIGURE 1 OVERVIEW OVER THE EVALUATION ACTIVITIES IN REVEAL..... | 18 |
| FIGURE 2. DISTRIBUTION OF SOCIAL MEDIA USAGE FOR WORK (N=18) | 21 |
| FIGURE 3: VISUALISATION OF SUGGESTION #2. ALLOW SEARCHES THAT CONCERN ALL CONTENT ASSOCIATED WITH PARTICULAR SOURCES OR LOCATIONS, RATHER THAN SPECIFIC SEARCH TERMS. | 22 |
| FIGURE 4. VISUALISATION OF SUGGESTION #4. UPON CLICKING A SOURCE NAME IN ANY STREAM, THE SOURCE INFORMATION FROM PIPL PRESENTED IN A LIGHT BOX. | 24 |
| FIGURE 5. VISUALISATION OF SUGGESTION #6: TRIGGERS FOR THE USER TO ENGAGE WITH VERIFICATION WORK ARE PROVIDED ON THE MAIN PAGE IN THE LEFT HAND COLUMN. | 26 |
| FIGURE 6: VISUALISATION OF SUGGESTION #9. A SIMPLIFIED SETUP PROCESS FOR STREAMS IS EASILY MADE AVAILABLE BY PRIORITISING THE "ADD STREAM" BUTTON. | 29 |
| FIGURE 7: VISUALISATION OF SUGGESTION #10. EASY DELETION OF STREAMS IN THE EDIT STREAM DIALOGUE. POSSIBLY ALSO AS A QUICK DELETE OPTION IN THE RIGHT HAND COLUMN. | 30 |
| FIGURE 8. VISUALISATION OF SUGGESTION #11. PROVIDE THE FILTERING MECHANISM IN THE HEADING, WHERE THE USER CAN CHOOSE ONE, SEVERAL OR ALL. REMOVE THE FILTERING MECHANISM FOR SOCIAL MEDIA SERVICES FROM ADVANCED SEARCHES. | 31 |
| FIGURE 9. VISUALISATION OF SUGGESTIONS #12 AND 13. OPTION FOR TOGGING BETWEEN TOP AND ALL CONTENT VISUALISED IN THE STREAM HEADING. | 33 |
| FIGURE 10. VISUALISATION OF SUGGESTION #16. TRENDING TOPICS MADE AVAILABLE AS A SUPPLEMENT TO STREAMS, MADE AVAILABLE AS A LIST IN THE RIGHT HAND COLUMN..... | 35 |
| FIGURE 11. VISUALISATION OF SUGGESTION #17. A TRENDING TOPIC CAN BE EXPLORED AS A STREAM BY DRAGGING IT TO THE MAIN PANEL. THE TRENDING TOPIC CAN ALSO BE EDITED AND SAVED AS A STREAM. | 35 |
| FIGURE 12. VISUALISATION OF SUGGESTION #19. CONTENT MAY BE MARKED AS INTERESTING BY CLICKING A YELLOW ICON. AS THE CONTENT IS MARKED, THE COUNTER IN THE STREAM HEADING INCREASES BY ONE. | 37 |
| FIGURE 13. VISUALISATION FOR SUGGESTION #21. AN AS-IS-RECORD OF MARKED CONTENT IS STORED FOR LATER RETRIEVAL. RETRIEVAL MAY BE DONE THROUGH THE VERIFICATION CHECKLIST. WHEN REQUESTING THE AS-IS-RECORD, A SCREEN DUMP OR SIMILAR OF THE CONTENT FILES ARE MADE AVAILABLE. | 38 |
| FIGURE 14 AGE DISTRIBUTION OF THE JOURNALIST SAMPLE (N=82) | 51 |
| FIGURE 15 USE OF VERIFICATION/FACT-CHECKING SERVICES LAST 12 MONTHS IN % (N=82) | 54 |
| FIGURE 16 SOCIAL MEDIA MONITORING AND RESULTS | 55 |
| FIGURE 17 CONTENT CHARACTERISTICS OVERVIEW AND RESULTS..... | 56 |
| FIGURE 18 IMAGE VERIFICATION AND RESULTS | 57 |
| FIGURE 19 RESULTS SOURCE VERIFICATION IN % (N=82) | 58 |
| FIGURE 20 RESULTS VERIFICATION BOARD IN % (N=82)..... | 59 |
| FIGURE 21. OVERVIEW OVER ALL THE SCORES CONCERNING ALL MODULES IN THE JOURNALISTS EVALUATION (N=82). 1 = LOWEST AND 7 = HIGHEST SCORE. | 64 |
| FIGURE 22. VISUALISATION OF THE ENTERPRISE PROTOTYPE | 67 |
| FIGURE 23. VISUALISATION OF SUGGESTION #8 (ENTERPRISE CASE). LABELS SUCH AS "CONTRIBUTOR SCORE" SHOULD BE CHANGED..... | 74 |

| | |
|---|-----|
| FIGURE 24 AGE DISTRIBUTION IN PERCENTAGE (N =90) | 77 |
| FIGURE 25 IN % "HOW FAMILIAR ARE YOU WITH GATHERING INSIGHTS (ABOUT A BRAND, IDEAS ETC.) FROM SOCIAL MEDIA COMMUNITIES?" (N =90)..... | 79 |
| FIGURE 26 STREAM MONITORING AND RESULTS..... | 80 |
| FIGURE 27 STREAM CONTENT AND RESULTS..... | 81 |
| FIGURE 28 TOP POSTS AND RESULTS..... | 82 |
| FIGURE 29 TOP USERS AND RESULTS..... | 83 |
| FIGURE 30 OVERVIEW OVER THE AVERAGE SCORES ON THE ENTERPRISE APPLICATION (N=90)..... | 87 |
| FIGURE 31 WHAT KIND OF JOURNALISTIC STORIES THE SAMPLE (N=120) PRIMARILY COVER IN %.. | 89 |
| FIGURE 32 SOCIAL MEDIA USE WHEN RESEARCHING A STORY IN % (N=120)..... | 91 |
| FIGURE 33 "HOW FAMILIAR ARE YOU WITH VERIFICATION OF CONTENT AND SOURCES IN SOCIAL MEDIA?" A COMPARISON BETWEEN SAMPLE 1 (N=88) AND SAMPLE 2 (N=120) IN %..... | 92 |
| FIGURE 34 "IN THE PAST 12 MONTHS, WHICH OF THE FOLLOWING VERIFICATION AND FACT-CHECKING TOOLS AND SERVICES HAVE YOU USED" IN %. COMPARING SAMPLE 1 (N=88) AND SAMPLE 2 (N=120)..... | 93 |
| FIGURE 35 HOW USEFUL THEY FIND CURRENT VERIFICATION AND FACT-CHECKING SERVICES IN % (N=120)..... | 93 |
| FIGURE 36 RESULTS - SOCIAL MEDIA MONITORING IN % (N=120) | 94 |
| FIGURE 37 RESULTS FILTER CONTENT IN % (N=120)..... | 95 |
| FIGURE 38 RESULTS TOP USERS IN % (N=120) | 96 |
| FIGURE 39 RESULTS ACTIVE COMMUNITIES IN % (N=120) | 97 |
| FIGURE 40 RESULTS INFLUENCE FEATURE IN % (N=120) | 98 |
| FIGURE 41 RESULTS COMMUNITY PREDICTION IN % (N= 120)..... | 99 |
| FIGURE 42 RESULTS SENTIMENT ANALYSIS | 100 |
| FIGURE 43 RESULTS MULTIMEDIA BROWSING IN % (N=120) | 101 |
| FIGURE 44 RESULTS MULTIMEDIA FILTERING IN % (N=120)..... | 102 |
| FIGURE 45 RESULTS VERIFICATION BOARD IN % (N=120)..... | 103 |
| FIGURE 46 RESULTS THRUTHNEST IN % (N=120) | 104 |
| FIGURE 47 RESULTS FAKE POST DETECTOR IN % (N=120)..... | 105 |
| FIGURE 48 RESULTS INTENTIONS TO USE REVEAL IN % – COMPARING SAMPLE 1 (N=82) AND SAMPLE 2 (N=120) | 106 |
| FIGURE 49 RESULTS TRUST IN AUTOMATIC VERIFICATION TOOLS IN % – COMPARING SAMPLE 1 (N=82) AND SAMPLE 2 (N=120)..... | 107 |
| FIGURE 50 OVERVIEW OF ENTERPRISE WORKERS USE OF SOCIAL MEDIA AT WORK IN % (N=120).. | 109 |
| FIGURE 51 COMPARING SAMPLE 1 (N=90) AND SAMPLE 2 (N=120) IN % "HOW FAMILIAR ARE YOU WITH GATHERING INSIGHTS (ABOUT A BRAND, IDEAS ETC.) FROM SOCIAL MEDIA COMMUNITIES?" | 110 |
| FIGURE 52 RESULTS STREAM MONITORING IN % (N=120)..... | 111 |
| FIGURE 53 RESULTS IN % CONTENT ANALYSIS (N=120) | 112 |
| FIGURE 54 RESULTS TOP POSTS IN % (N=120) | 113 |
| FIGURE 55 RESULTS TOP USERS IN % (N=120) | 114 |
| FIGURE 56 COMPARING "USEFUL" IN % (N=120) | 115 |
| FIGURE 57 COMPARING "EASY OF USE" IN % (N=120) | 115 |
| FIGURE 58 COMPARING "COMPELLING" IN % (N=120) | 116 |
| FIGURE 59 INTENTION TO USE IN % COMPARING SAMPLE 1 (N=90) AND SAMPLE 2 (N=120)..... | 117 |
| FIGURE 60 TRUST IN % COMPARING SAMPLE 1 (N=90) AND SAMPLE 2 (N=120) | 117 |
| FIGURE 61 OUTLINE OF PRIVACY POLICY IN REVEAL..... | 123 |
| FIGURE 62 OUTLINE OF TERMS OF USE REVEAL..... | 123 |

LIST OF TABLES

| | |
|---|----|
| TABLE 1. THE DEGREE OF IMPORTANCE OF DIFFERENT SOCIAL MEDIA SITES FOR JOURNALISTIC PURPOSES (N=18) | 21 |
| TABLE 2. KEY ISSUES AND SUGGESTIONS – ISSUES 1–3 | 22 |
| TABLE 3. KEY ISSUES AND SUGGESTIONS – ISSUE 4 | 23 |
| TABLE 4. VERIFICATION OF CONTENT AND SOURCES OF SOCIAL MEDIA AS A PROBLEM..... | 24 |
| TABLE 5 KEY ISSUES AND SUGGESTIONS – ISSUE 5 | 25 |
| TABLE 6. KEY ISSUES AND SUGGESTIONS – ISSUE 6 | 25 |
| TABLE 7 KEY ISSUES AND SUGGESTIONS – ISSUE 7 | 26 |
| TABLE 8 KEY ISSUES AND SUGGESTIONS – ISSUE 8 | 27 |
| TABLE 9. KEY ISSUES AND SUGGESTIONS – ISSUES 9–10 | 29 |
| TABLE 10. KEY ISSUES AND SUGGESTIONS – ISSUE 11 | 31 |
| TABLE 11. KEY ISSUES AND SUGGESTIONS – ISSUES 12–13..... | 32 |
| TABLE 12. KEY ISSUES AND SUGGESTIONS – ISSUE 14 | 33 |
| TABLE 13. KEY ISSUES AND SUGGESTIONS – ISSUE 15 | 34 |
| TABLE 14. KEY ISSUES AND SUGGESTIONS – ISSUES 16–17..... | 34 |
| TABLE 15. KEY ISSUES AND SUGGESTIONS – ISSUE 18 | 36 |
| TABLE 16. KEY ISSUES AND SUGGESTIONS – ISSUES 19–20..... | 37 |
| TABLE 17. KEY ISSUES AND SUGGESTIONS – ISSUE 21 | 38 |
| TABLE 18. KEY ISSUES AND SUGGESTIONS – ISSUE 22 | 39 |
| TABLE 19. KEY ISSUES AND SUGGESTIONS – ISSUE 23 | 40 |
| TABLE 20. KEY ISSUES AND SUGGESTIONS – ISSUE 24 | 41 |
| TABLE 21. KEY ISSUES AND SUGGESTIONS – ISSUE 25 | 41 |
| TABLE 22. KEY ISSUES AND SUGGESTIONS – ISSUE 26 | 42 |
| TABLE 23. SAMPLE OF INTERVIEWED YOUNG JOURNALISTS (N=15)..... | 43 |
| TABLE 24. YOUNG JOURNALISTS IN SPAIN (N= 7) AND NORWAY (N = 7) AND THEIR USE OF SOCIAL MEDIA AT WORK. <i>NOTES</i> TWEETDECK IS A CURATING SERVICE FOR TWITTER..... | 46 |
| TABLE 25. YOUNG JOURNALISTS IN SPAIN (N= 7) AND NORWAY (N = 7) AND THEIR USE OF VERIFICATION AND FACT-CHECKING SERVICES..... | 47 |
| TABLE 26 OVERVIEW OVER RESPONDENTS AND THEIR WORKING COUNTRY (N=82)..... | 51 |
| TABLE 27 OVERVIEW OVER TYPE OF JOURNALISM COVERED BY THE SAMPLE (N=82)..... | 52 |
| TABLE 28 AREA OF WORK (N=82) | 52 |
| TABLE 29 SOCIAL MEDIA USE WHEN RESEARCHING A STORY (N=82) | 53 |
| TABLE 30 SOCIAL MEDIA USE FOR DISTRIBUTING OR PROMOTING A STORY (N 82)..... | 53 |
| TABLE 31 INTENTIONS TO USE REVEAL AND TRUST | 60 |
| TABLE 32. LIST OF PARTICIPANTS IN THE ENTERPRISE EVALUATION | 66 |
| TABLE 33. QUESTIONS IN THE USER EVALUATION..... | 68 |
| TABLE 34. QUESTIONS IN THE USER EVALUATION..... | 69 |
| TABLE 35. EXAMPLE QUESTIONS IN THE USER EVALUATION..... | 70 |
| TABLE 36. KEY ISSUES AND SUGGESTIONS – ISSUE 1 (ENTERPRISE CASE) | 71 |
| TABLE 37. KEY ISSUES AND SUGGESTIONS - ISSUE 2 (ENTERPRISE CASE)..... | 72 |

| | |
|---|----|
| TABLE 38. KEY ISSUES AND SUGGESTIONS - ISSUE 3 (ENTERPRISE CASE)..... | 72 |
| TABLE 39. KEY ISSUES AND SUGGESTIONS - ISSUE 4 (ENTERPRISE CASE)..... | 72 |
| TABLE 40. KEY ISSUES AND SUGGESTIONS - ISSUE 5 (ENTERPRISE CASE)..... | 73 |
| TABLE 41. KEY ISSUES AND SUGGESTIONS - ISSUE 6 (ENTERPRISE CASE)..... | 74 |
| TABLE 42. KEY ISSUES AND SUGGESTIONS - ISSUE 7 (ENTERPRISE CASE)..... | 74 |
| TABLE 43. KEY ISSUES AND SUGGESTIONS - ISSUE 8 (ENTERPRISE CASE)..... | 74 |
| TABLE 44. KEY ISSUES AND SUGGESTIONS - ISSUE 9 (ENTERPRISE CASE)..... | 75 |
| TABLE 45. KEY ISSUES AND SUGGESTIONS - ISSUE 10 (ENTERPRISE CASE)..... | 75 |
| TABLE 46. KEY ISSUES AND SUGGESTIONS - ISSUE 11 (ENTERPRISE CASE)..... | 75 |
| TABLE 47 OVERVIEW OVER THE ENTERPRISE WORKERS AND THEIR CURRENT POSITION | 78 |
| TABLE 48 HOW OFTEN DO YOU USE THESE SOCIAL MEDIA FOR WORK PURPOSES? (N=90)..... | 78 |
| TABLE 49 SOCIAL MEDIA MONITORING TOOLS USED BY THE RESEARCH SAMPLE (N = 90) | 79 |

Executive Summary

This deliverable addresses the important question of how new applications for automatic verification and curation of content in social media improve journalists' and enterprise workers' fact-checking and verification practices. Journalists and enterprise workers increasingly use a range of techniques for curation and assessment of content in social media. Nevertheless, they struggle more than ever to keep up with the growing volume of social media content. In particular, they often face difficulties in implementing good tools and techniques for evaluation of different content modalities in social media. New applications developed in REVEAL may help both journalists and enterprise workers.

This report provides evaluations both from the user perspective (N= 452) and the legal perspective of the impact of the REVEAL-applications.

First, from the user evaluations we provide formative and summative evaluations concerning usefulness, ease of use and general user experience. *The formative evaluation* covers the user evaluations of several different mock-up and prototype versions of REVEAL applications, in response to defined journalist scenarios and enterprise scenarios. The aim has been to guide and improve the development of the REVEAL applications. *The summative evaluation* shows the results of how potential users experience the final version of REVEAL.

The Journalist application has been evaluated from the following steps:

- Eighteen journalists were part of three-user evaluation groups (N=18) in June 2015 in Oslo evaluating the Journalist application.
- Fifteen working journalists from Spain and Norway were involved in evaluation of the REVEAL application in June and October 2015.
- 82 news journalists in Europe and US evaluated key functionalities of the Journalist applications through an online questionnaire June 2016.
- Finally, a summative evaluation was conducted of the final application in mid of December 2016 with 120 journalists through an online questionnaire.

The Enterprise application has been evaluated from the following steps:

- Seven in-depth interviews and user tests with product managers and community managers were conducted in December 2015 to evaluate a mock-up version of the Enterprise application.
- 92 enterprise workers in US, Europe and India evaluated key functionalities of the Enterprise application through an online questionnaire in September 2016.
- Finally, a summative evaluation was conducted of the final application in mid of December 2016 with 120 enterprise workers through an online questionnaire.

We describe several findings and recommendations that have been helpful in improving both the Journalist application and the Enterprise application, with concrete design suggestions visually presented. Overall, the usefulness of these applications are perceived to be good among the potential users groups. 77,5% of the journalists and 66% of the Enterprise workers are in the summative evaluation rating between 5 and 7 (strongly agree) measuring "intention to use" tools similar to those in REVEAL, showing the potential impact of these applications. Those rating low on usefulness typically reported to use social media less at work, while respondents using social media regularly at work typically highlighted the usefulness and trustworthiness of the application. However, in the journalist case, there are issues concerning the trust of such verification tools. Transparency in the purpose and process of how the algorithms are working in the verification process is important for the journalists. Another important factor affecting trust is the ownership and support by news organisations. It is, therefore important, that REVEAL becomes a well-known branded solution, backed up by well-known news organizations.

Second, the legal evaluation of REVEAL consists of an analysis whether legal requirements in the project were respected. The analysis focuses on three areas crucial for the development of the REVEAL concept and application: 1) privacy and data protection, 2) intermediary liability, and 3) media law and freedom of expression.

Our policy recommendations addressed the topics examined in REVEAL, that is, privacy and data protection, intermediary liability, media and freedom of expression and, lastly, compliance with the API T&C's. The articulated recommendations are mainly directed to the policy makers such as the European Commission. The recommendations focus on the importance of clarification of rules, for example provisions of the new data protection regulation (GDPR), as well as the need to strengthen protection of rights, freedoms and democratic values in the EU, in the context of the Digital Single Market Strategy initiative. The report provides recommendations that can help shaping the future regulations to ensure that they adequately address the problems posed by the current (and future) technical developments.

1 Introduction

While the internet has the potential to provide people with easy access to relevant and factual information, the rise of social media like Facebook and Twitter has made filtering and assessing online content increasingly difficult due to its rapid flow and immense volume¹. Both journalists and enterprise workers increasingly use a range of techniques for curation and assessment of content in social media. Nevertheless, they struggle more than ever to keep up with the growing volume of social media content. In particular, they often face difficulties in implementing good tools and techniques for evaluation of different content modalities in social media.

An important question in this deliverable is how new REVEAL applications for automatic verification and curation of content in social media can support journalists' and enterprise workers' fact checking and verification practices. The success of new applications developed in REVEAL depends on its fit with users' requirements and desires. The applications need to serve both journalists and enterprise workers with better solutions than the solutions that are already available on the market. Such applications also need to be aligned with legal directives and policy recommendations.

Following the evaluation plan described in D7.1, the objective of the evaluation in REVEAL has been to support the technical development activities in bringing forward solutions that are well-received as useful and usable by their intended users and that the developed applications are associated with a positive user experience. The output of the evaluations presented herein consist of a detailed description of the following: (a) insights in users' perceptions of the usefulness of the designs, (b) identification of usability issues and (c) assessment of user experience with concrete implications in terms of suggested updates to user requirements, suggestions for redesign, and assessments of the impact. Finally, it includes legal and regulatory recommendations (such as data protection, privacy, and intermediary liability).

Formative evaluations have been conducted on the preliminary applications, to support the development of the final prototype and applications. The formative evaluations have been detailed on the basis of the current version of user requirements (in WP1) and input from studies of user behaviour and experience (in WP7), as well as the particular aims of the applications developed in WP6. Specifications of formative and evaluations have been conducted as a collaborative process with ATC, SAG and DW within the project. Evaluation methods included interviews, user tests and survey evaluations. Most of the results from the formative evaluations have been presented in detail in plenary project-meetings as well in the internal report (D.7.2.1) to feed back to the relevant project partners as soon as possible to maximise their downstream utility in the development process.

Summative evaluations have been conducted on the final applications, to support assessments of the impact of the REVEAL framework and applications. The summative evaluations has been

¹ 1. Brandtzaeg, P.B., & Følstad, A. (in press). Trust and Distrust in Online Fact-Checking Services. *Communications of the ACM*.

detailed and conducted on the basis previous evaluations (M29), and input from studies of user behaviour and experience. In addition, the specifications of formative and evaluations has been conducted as a collaborative process with ATC, SAG and DW within the project. The summative evaluation method has been large-scale survey methodology, a living lab approach to enable feedback from several potential REVEAL-users.

Legal/regulatory requirements evaluation has been a continuous task during the project. This evaluation activity has been strictly linked to the legal research performed in WP1. Legal activities in WP1 have focused on the impact that existing rules may apply on REVEAL applications; task 7.3 has been investigating the relationship between law and technology from the opposite perspective. Namely, it examines the impact of the new technologies on the existing rules. As a result of this task, policy recommendations are provided within this deliverable with the aim to help influencing the future shape of the EU regulation in the areas of privacy and data protection, intermediary liability, media law and protection of freedom of expression.

Figure 1 shows an overview over the main evaluation activities within REVEAL project that are described in this deliverable. In total, more than 452 potential end-users have been directly involved in evaluation activities in this project.

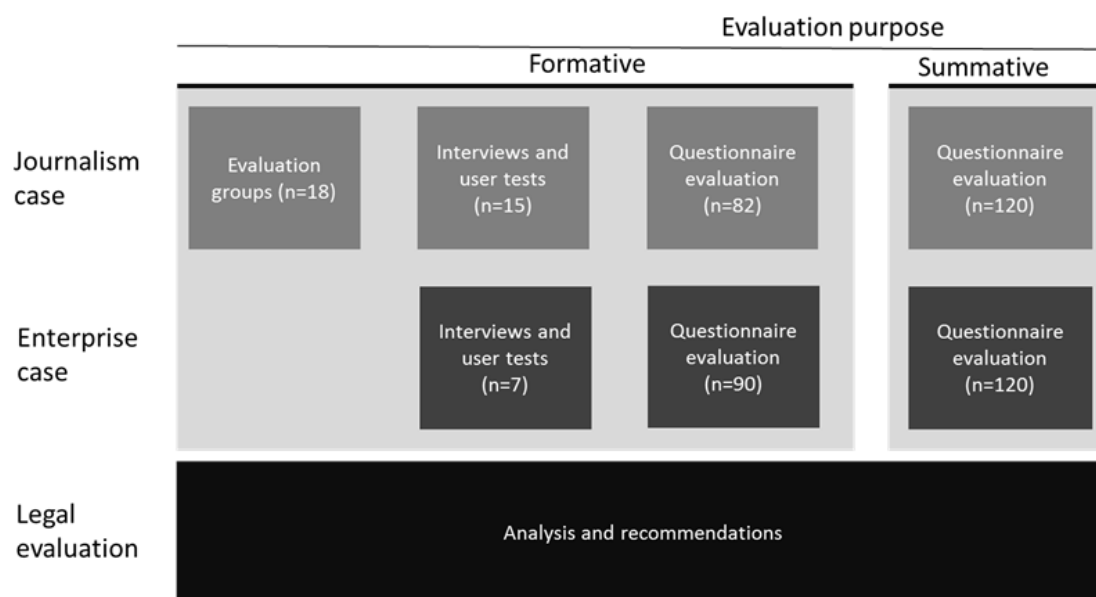


Figure 1 Overview over the evaluation activities in REVEAL

Detailed description of the different evaluation activities performed in REVEAL follows below and includes:

- The formative evaluations concerning the journalism application.
- The formative evaluations concerning the enterprise application.
- The summative evaluations concerning the journalism applications.
- The summative evaluations concerning the enterprise applications.
- The legal evaluations and policy recommendations.

2 Formative evaluation - Journalist application

The formative evaluations concerning the journalism application are divided into three sections:

- User evaluations groups.
- Interviews and user tests.
- Questionnaire survey.

2.1 User evaluations groups

The REVEAL journalist mock-up was evaluated in mid-June 2015 in three evaluation groups involving 18 (5+7+6) journalism students from Oslo and Akershus University College.

Before the participants met for the evaluation they responded to an online questionnaire about their background (gender, age, working experience), social media usage for the purpose of work and verification issues concerning content in social media. This survey was distributed via email to all the participants.

The 18 participants in this sample had the following background information concerning gender, age and working experience:

- **Gender distribution:** In total, the group consisted of 4 male and 14 female participants.
- **Average age:** 25,5 years.
- **Journalism work experience:** Five reported several years of experience in journalism, six reported to have one year of experience, three reported several months of experience, while the last four reported to have work experience only as part of their journalistic education.

The mock-up was presented to the participants as screenshots of key screens; they also got their own personal paper copy (printed in colour, A3 format) of all the screenshots.

The evaluation groups were conducted following a guide including the following:

- The use of social media for journalistic purposes
- Digital divides in the use of social media for journalistic purposes
- Verification in social media
- Education and social media for journalistic purposes
- Walkthrough and feedback on the screen shots of the REVEAL mock-up

Next, we present the findings. Key issues and suggestions are provided in separate tables. Each issue has a suggested priority, as either *high*, *medium* or *low*. Most issues with a suggested priority of high also have associated visualisations.

We focused on the three key constructs in the user evaluation of the REVEAL prototype (in verbatim from D7.1):

- **Usefulness** concerns whether the REVEAL framework and applications are perceived by users to increase their job performance, given that the framework and applications have satisfactory usability. In short, usefulness concerns whether the REVEAL framework and applications are perceived as needed by their users.
- **Usability** concerns whether users are able to use the REVEAL framework and applications to achieve specified goals in an effective and efficient manner.
- **User experience** concerns the users' subjective experiences with the REVEAL framework and applications. In particular, we see it as important to address the users' perceptions of privacy and trust, but also how "compelling" or attractive they find the design of the application.

2.1.1 Background

In the first half of the evaluation group, the participants were asked questions serving as background information on social media use, verification and social media as part of their journalism education. It is important to acknowledge that this was part of the formative evaluations, intended to generate input to the subsequent development process. In addition, Deutsche Welle (DW) has systematically been collecting data that inform designers along the development process.

Following the Evaluation plan (see D.7.1), this part of the formative evaluations, presented herein, served to generate feedback of relevance for the user acceptance and experience, and identify issues and change suggestions for the applications and, possibly, also the user requirements. The findings from the formative evaluations will inform the summative evaluations. Furthermore, the formative evaluations may provide knowledge of relevance for the user requirements. The background section also included discussions on digital divides; the findings from these discussions are presented at the end of the document.

2.1.2 Use of social media for journalistic purposes

The participants were asked how they use social media for journalistic purposes.

2.1.2.1 Facebook most used

As shown in Figure 2, across the three groups, Facebook was reported to be the most used social medium for journalistic purposes, followed by Twitter, Instagram, YouTube and blogs.

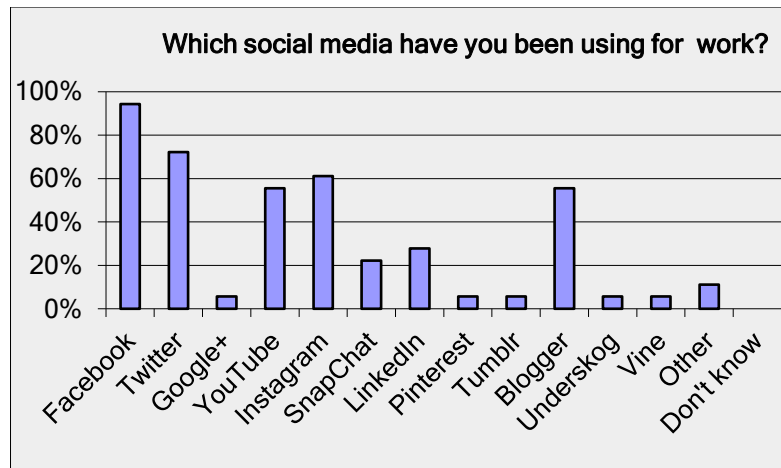


Figure 2. Distribution of social media usage for work (N=18)

The participants reported that the popularity of Facebook was due to its reach. "People check their Facebook account all the time", which is something that also makes it easy to get in touch with people or sources that are important for a particular news story.

Participants in Groups 2 and 3 reported to browse in the US Facebook version instead of the Norwegian, as this supposedly searches in images and videos from closed profiles.

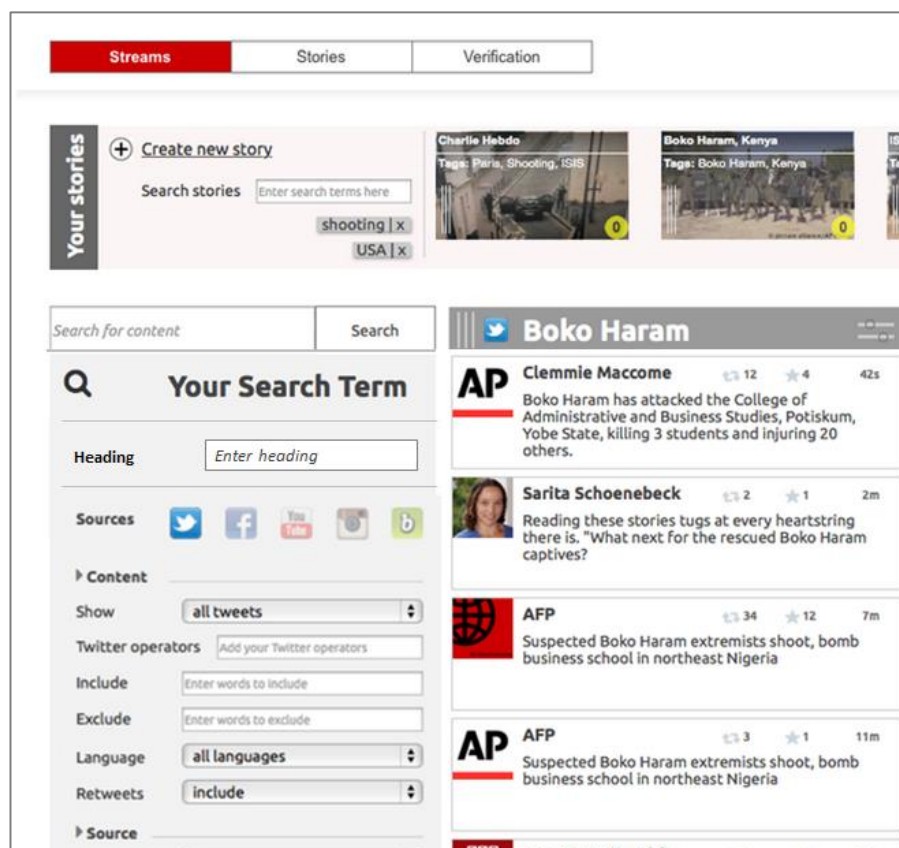
The participants in Group 3 reported to use Facebook to find sources associated with brand-related stories. For example, if trains have excessively delayed, one could go to the train provider Facebook page and find people that had same impact by the delays, simply via looking for negative comments on the train provider's wall. Table 1 below shows how the participants *rated the importance* of the different social media sites that they are using for work.

Table 1. The degree of importance of different social media sites for journalistic purposes (N=18)

| Social media | Very important | Important | Neither nor | Unimportant | Not important at all |
|--------------|----------------|-----------|-------------|-------------|----------------------|
| Facebook | 9 | 7 | 2 | 0 | 0 |
| Twitter | 8 | 7 | 3 | 0 | 0 |
| YouTube | 1 | 10 | 5 | 2 | 0 |
| Instagram | 1 | 7 | 6 | 3 | 0 |
| LinkedIn | 0 | 12 | 3 | 3 | 0 |
| Blogs | 3 | 6 | 7 | 0 | 2 |
| Pinterest | 0 | 2 | 6 | 6 | 4 |
| Tumblr | 0 | 1 | 9 | 4 | 4 |
| Vine | 0 | 0 | 7 | 6 | 5 |
| Other | 0 | 0 | 10 | 3 | 2 |
| Don't know | 0 | 0 | 8 | 3 | 3 |

Table 2. Key issues and suggestions – issues 1–3

| # | Issue | Suggestion | Pri. |
|---|--|---|------|
| 1 | Facebook is just as important as Twitter. However, the mock-up is mainly set up to support Twitter, paralleling the structure of TweetDeck. This implies an underlying challenge (not discussed by the participants): Is the structuring and verification of Facebook content sufficiently supported in the mock-up? | This issue may require considerations on several levels, address the issue of search for content that includes several social media services. | High |
| 2 | Currently searching for topics is well supported. It is uncertain whether searching for content from specific persons or groups is sufficiently supported. | Support empty searches in content from a specified list of persons. This requires that empty searches are allowed and the possibility to label stream headings according to groups of people. | High |
| 3 | Instagram and YouTube are also important to journalists. It is uncertain whether the current design of streams support the presentation of content from these services. | Conduct rapid prototyping to identify how different types of social media content should be presented in the streams, particularly how content including images or video should be presented. | High |

**Figure 3: Visualisation of suggestion #2. Allow searches that concern all content associated with particular sources or locations, rather than specific search terms.**

2.1.2.2 Social media for promoting content

The participants reported to use social media in order to promote content. They also reported that they have been encouraged both by their teachers at school and by the editors.

The participants in Group 2 were divided in their use of private social media accounts for sharing content related to content from their own newsroom. "If I was to share this to my private network, it should be something that I am really proud of". The concern voiced by these participants was that friends or followers would dis-follow them if they promoted too much content from the newsroom. "Sharing on Facebook is about authenticity. If you uncritically share everything from your employer, you lose this authenticity". The participants of Group 3 reported concern on being too private on social media, as their journalistic integrity might be threatened if they go too far in being opinionated in public.

2.1.2.3 Social media for research

Social media was reported to be used for research purposes. The participants in Group 2 discussed two possible uses of social media for research: (a) as a news hub (overview of news and inspiration to new stories), and (b) as a case hub (when you have the story, but need a case example, e.g. a person to interview).

The participants argued that social media content typically is embedded in the story, for example by using Twitter comments, but that the stories rarely are developed on the basis of social media content alone.

For research on persons, Facebook was reported to be particularly useful. LinkedIn was also reported to be used for this purpose, for example to find contact and background information on the person. Some in Groups 1 and 2 reported also to use Twitter and Instagram to find sources. In particular, it was argued that geolocation could be useful to find sources near an event.

For research on topics, hashtags on Twitter or Instagram were preferred. For video content on breaking news, YouTube was reported as potentially useful, as the ease of publishing on YouTube makes it a potential good and open source of real-time news footage.

The participants in Group 2 reported blogs to be somewhat inconvenient for research, as it is difficult to get an overview of potentially relevant blog content. The participants of Group 3 argued that blogs increasingly are becoming irrelevant due to the issue of content marketing through blogs. The participants in Group 3 discussed Instagram as a content source, in particular for footage by celebrities, for example as part of sports reporting.

Table 3. Key issues and suggestions – issue 4

| # | Issue | Suggestion | Pri. |
|---|--|--|------|
| 4 | Finding details on the source and contact information is important when using social media as a case hub. The mock-up provides this information, but only as part of the verification process. | Make information on sources easily available directly from the social media content in the stream. | High |

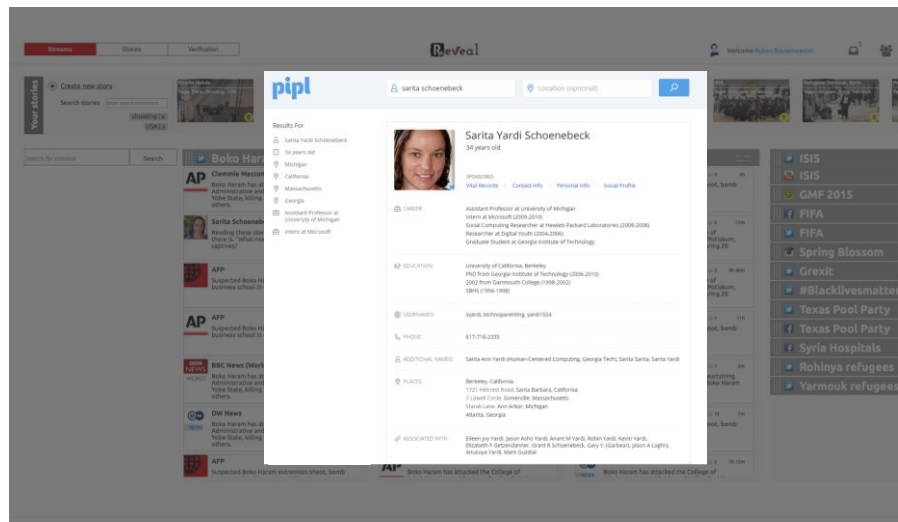


Figure 4. Visualisation of suggestion #4. Upon clicking a source name in any stream, the source information from Pipl presented in a light box.

2.1.3 Verification in social media

The participants were asked about their impression of and experiences with verification in social media. The survey also asked about the degree to which they find social media a particular problem concerning verification, as illustrated in Table 4. 14 out of 18 journalists reported to agree slightly or strongly to this question.

Table 4. Verification of content and sources of social media as a problem (N 18)

| | |
|-------------------|---|
| Strongly disagree | 0 |
| Disagree | 1 |
| Slightly disagree | 0 |
| Neither nor | 3 |
| Slightly agree | 6 |
| Agree | 6 |
| Strongly agree | 2 |
| Don't know | 0 |

2.1.3.1 Verification in social media is potentially challenging

Verification in social media was seen as challenging, and the participants argued that journalists need to be mindful of these challenges in particular, as false claims may go viral. False claims going viral may be an issue both when individuals make erroneous judgment calls or in propaganda wars.

Verification was reported to be potentially challenging when social media is used for research purposes. In particular, visual content was imposing challenges, as such content may easily

misrepresent a claimed situation when the context is not properly explained. Also, it was noted that different work contexts represented various verification challenges. For example, the Group 3 participants argued sports to be a domain of many rumours, which made it highly important to verify the sources of claims and to seek out the views of other stakeholders.

In Group 3, the particular verification challenge of generalisation was noted. For example, if, following a theatre premiere, a small number of people Tweet that the show is tedious or boring (and none tweets otherwise), it may be tempting for the journalist to angle the story accordingly. However, the truth may be that the silent majority was happy with the show and that those voicing an opinion were outliers. Generalisations on the basis of social media content could be relevant to include as an issue in the REVEAL application.

Table 5 Key issues and suggestions – issue 5

| # | Issue | Suggestion | Pri. |
|---|--|--|------|
| 5 | Social media content may provide a biased view of the public opinion, as those who comment in social media may differ from those who do not. It may also be relevant to be able to assess whether opinions voiced are controversial. | Consider whether the REVEAL application could include modules for assessing the generality of social media comments, or the degree to which they are controversial or not. | Low |

2.1.3.2 Verification is engaging to some

Some of the participants in Groups 2 and 3 reported verification issues to be particularly engaging. One of the participants had studied Russian trolling for propaganda purposes, where social media users are organised to systematically set up fake profiles and spread propaganda in online forums. Another was particularly updated on the work of Elliot Higgins/Brown Moses, and yet another on the problem of images taken out of context when reporting from Venezuela. A fourth reported on a case from Vadsø in Norway where a fake Facebook profile had gotten close to 50 friends in a short period of time — none of the friends questioning the realness of the profile.

This potentially engaging aspect of verification may possibly be potential driver for use of the verification module in the REVEAL application.

Table 6. Key issues and suggestions – issue 6

| # | Issue | Suggestion | Pri. |
|---|--|--|------|
| 6 | Verification in social media may be engaging, but journalists may need triggers to see that verification in social media can be more than merely a necessary routine. The REVEAL application holds potential to make verification engaging, but this potential is not fully realized. The user is not given any triggers to actually engage in verification or look up examples of interesting verification. | Provide triggers to engage with verification work on the main page, for example by listing recent verifications, recent verification challenges, top verification contributors and trending topics in particular need of verification. | High |

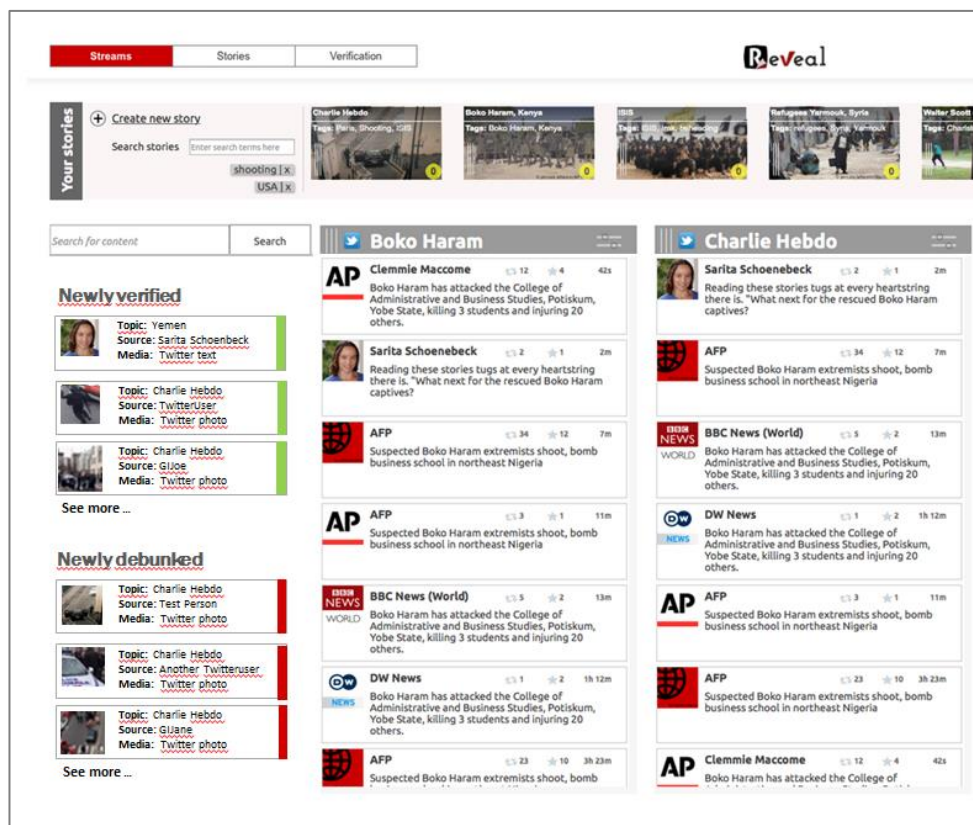


Figure 5. Visualisation of suggestion #6: Triggers for the user to engage with verification work are provided on the main page in the left hand column.

2.1.3.3 Little knowledge of services supporting the verification of social media

Interestingly, the participants were hardly aware of any dedicated services or tools that may support verification in social media (e.g. Storyful, Snopes, Politifact, Tineye, FotoForensic). This is not to say that the participants did not use online services for verification. The participants of all groups reported on how they cross-check information across social media services, for example by looking up a source from Twitter on Facebook or LinkedIn. Many of the participants also used Google image reverse search for provenance analysis. Upon being asked to speculate on the possible usefulness of debunking services, the participants in Group 2 assumed that finding a story flagged in such a service would sensitize them to the possible issues with the story and spark increased verification effort.

Table 7 Key issues and suggestions – issue 7

| # | Issue | Suggestion | Pri. |
|---|---|---|--------|
| 7 | Journalists typically seem to use classical approaches for verification, possibly including a mix of general purpose social media services, for cross checking and verification rather than specialised verification tools. | Need to design REVEAL to easily blend in with the way journalists work with verification. In particular, it will be necessary to design for journalists not always using REVEAL for verification. | Medium |

2.1.4 Education concerning social media for journalistic purposes

The participants were asked about the degree to which their education prepared them for the use of social media for journalistic purposes.

The participants in Groups 2 and 3 argued that social media was not a priority topic at all in education, neither concerning how to use social media for distribution of content nor concerning verification of social media content. However, participants in all groups reported that the teachers encouraged the students to use social media to generate engagement for content.

The participants in these groups argued that the lack of education on social media was due to a lack of competency among teachers. They suggested that such a lack of competency could be resolved in the use of guest lecturers from the field, something that is done today to some degree. They also discussed whether outdated books were to blame for the lack of update on social media, but concluded that one could hardly expect text books to keep pace with the rapid evolving of social media.

The participants in Group 1 were less categorical in their criticism of how social media is covered in their education. These reported that for some educational courses, the use of social media was a more prioritized topic than in others. For example, courses on online journalism were reported to include more on the use of social media than courses on "paper journalism".

In all three groups, it was argued that though the students indeed were taught the general craft of verification, much less training was provide concerning how verification applies to the use of social media.

The education on social media was described as more "learning by doing" than "learning". It was also argued that supervisors could be better sources of learning how to use social media than lectures or courses.

Table 8 Key issues and suggestions – issue 8

| # | Issue | Suggestion | Pri. |
|---|---|---|--------|
| 8 | Current journalism education does not provide sufficient training concerning verification in social media. This holds potential for the REVEAL application. | Consider including institutions of journalism education and journalism teachers as a target user group of the REVEAL application. | Medium |

2.1.5 Feedback from the walkthrough of the application

The second half of the evaluation session focused on walking through and discussing the REVEAL mock-up. The walkthrough was conducted so that the participants (a) were presented with a given screen (of the mock-up) with minimal presentation and asked to discuss what they thought this was, then (b) explained what the screen was before, (c) discussing the usefulness and possible changes needed to the functionality and layout of this screen. The findings from this part of the evaluation are summarised below.

2.1.5.1 General remarks

The REVEAL mock-up was evaluated by the participants as looking promising and relevant. However, some voiced concern that the REVEAL application may be too cumbersome to use for the typical journalist, particularly in terms of developing and maintaining stories, as well as in terms of supporting a highly thorough and detailed verification process. Overall, the application is not really targeting the mainstream journalist, but rather verification experts or journalists dealing with continuous verification. With this in mind, the curation approach (e.g. stories) might be a bit out of scope for this target group, as this is something the expert verifier would find less useful.

Others voiced scepticism concerning the REVEAL application as yet another social medium that journalists have to relate to. When summarizing, the participants saw the mock-up as particularly promising to do the following:

- Quickly identify relevant social media content.
- Facilitate the research process, particularly the identification of potential sources.
- Provide a starting point for verification, even though verification was judged as likely also to require other means — such as direct contact with sources.

2.1.5.2 Streams

The concept of streams appreciated

The concept of streams was easily understood and appreciated. The participants noted that the REVEAL streams are similar to what one can get in other services, such as Tweet Deck. The idea of being able to set up a large number of streams was appreciated. The participants in Group 2 exemplified their appreciation in that streams can be a good environment for coverage of an ongoing event where updates are written continuously and also for support in writing a concluding wrap-up of the same ongoing event.

Setting up / editing streams – complex configuration appreciated

The participants of all three groups were sympathetic to the idea of a rather complex configuring of searches for each stream as long as the streams represent a topic they will work on for a while. However, the participants in Groups 2 and 3 accentuated that such complex configuration is not always desired.

The idea of using geolocation as a parameter in setting up searches was particularly appreciated for all groups.

Setting up / editing streams –a simple set-up option is also needed

The participants in Group 2 and 3 argued that while in some situations journalists would want a complex configuration of searches, other situations may require a simple way to set up streams, particularly when working under pressure with limited time.

Hence, it should be possible to add streams without other input from the journalist than just the search term (as is likely to be in line with what is proposed in the current mock-up).

Table 9. Key issues and suggestions – issues 9–10

| # | Issue | Suggestion | Pri. |
|----|--|--|------|
| 9 | While complex setup for streams is appreciated in some contexts, the participants also reported the need for a simple setup process for streams. | Possible to add streams without input from the journalist other than just the search term. | High |
| 10 | The easy setting up of streams also requires easy options for deletion of streams, as the journalists then will need to easily discard non-useful streams. | Possible to easily delete non-useful streams, for example as a visible delete-option in the stream heading. (This, however, requires some kind of warning before deleting streams that have been configured more than just providing the search term). | High |

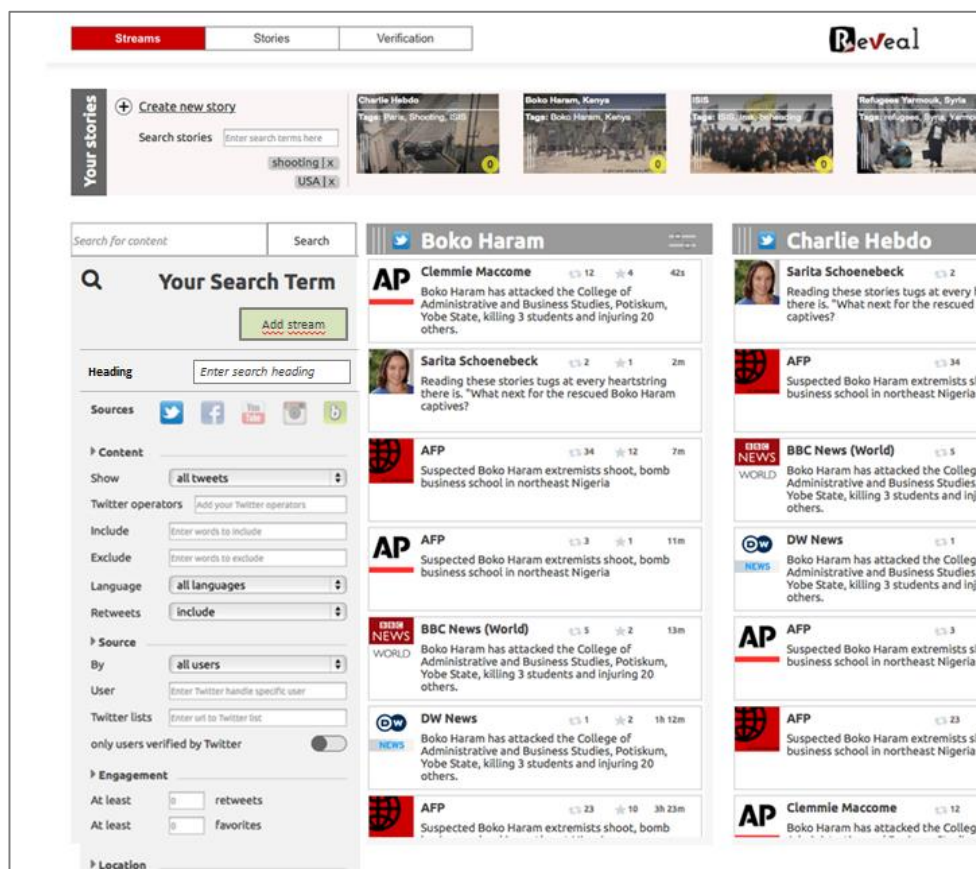


Figure 6: Visualisation of suggestion #9. A simplified setup process for streams is easily made available by prioritising the "Add Stream" button.

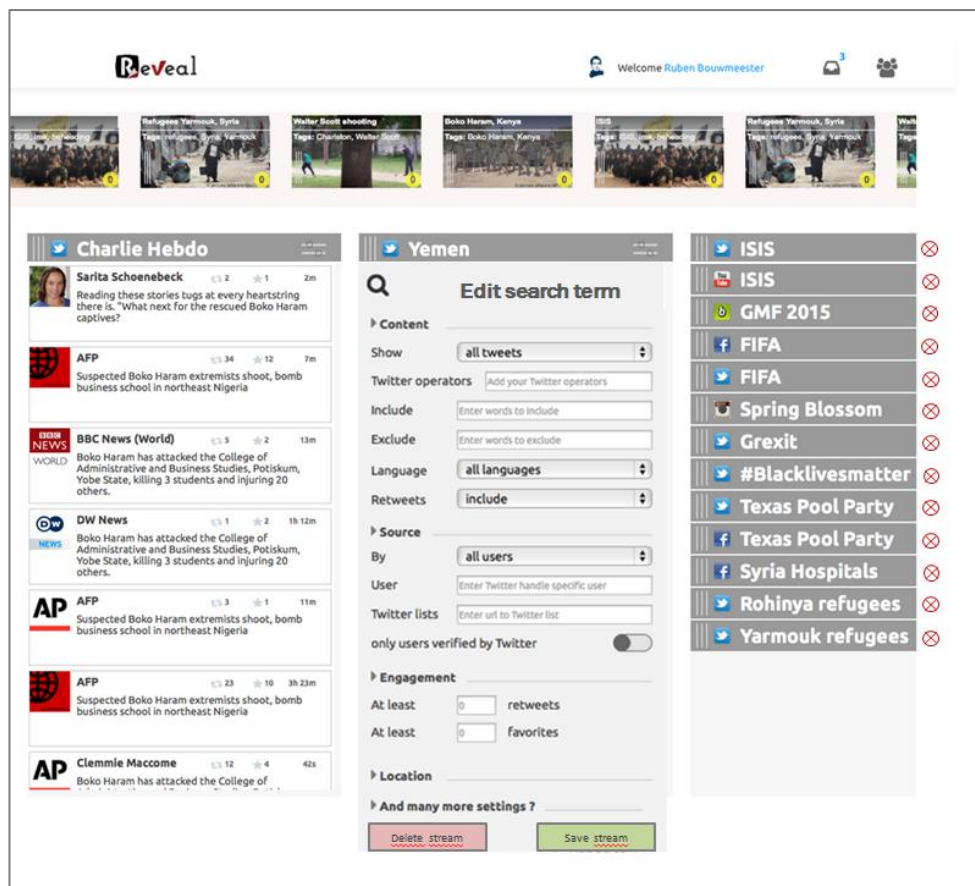


Figure 7: Visualisation of suggestion #10. Easy deletion of streams in the edit stream dialogue. Possibly also as a quick delete option in the right hand column.

2.1.5.3 Provide easy filtering options

The participants in Groups 2 and 3 indicated that they would like flexible filtering of the streams for different purposes. The participants in Group 2 suggested that it should be easy to select whether a stream should show all or just top content. The participants in Groups 2 and 3 suggested that it should be easy to select whether to see content from just one or all social media services — possibly as filters accessible immediately in the stream heading.

2.1.5.4 Streams to represent content from all social media services?

All participants wanted access to more social media than Twitter and regarded Facebook, Instagram and LinkedIn to be important add-ons. The participants were, however, undecided on whether they wanted the streams to present content from all relevant social media services or just one. The participants in Group 1 argued that the default setting should be to include all supported social media services in the same stream (instead of, for example, one Stream for ISIS in Twitter and one stream for ISIS in YouTube as the mock-up now suggests). The participants in Group 2, however, argued for the benefit of being able to separate different social media services in different streams, particularly as different social media services have different publishing paces; for example, the publishing pace at YouTube is far slower than that of Twitter. The participants in Group 3 argued that the context was decisive for whether one wanted streams with all or just some social media.

This implies that it will be beneficial for the REVEAL application to be able to support both showing content from several social media services in the same stream as well as to set up separate streams for separate social media services.

Table 10. Key issues and suggestions – issue 11

| # | Issue | Suggestion | Pri. |
|----|---|--|------|
| 11 | The context of use is decisive for whether or not it is useful to have content from several social media services in the same stream. | Make the filtering of content on the basis of social media services immediately available for each stream. | High |

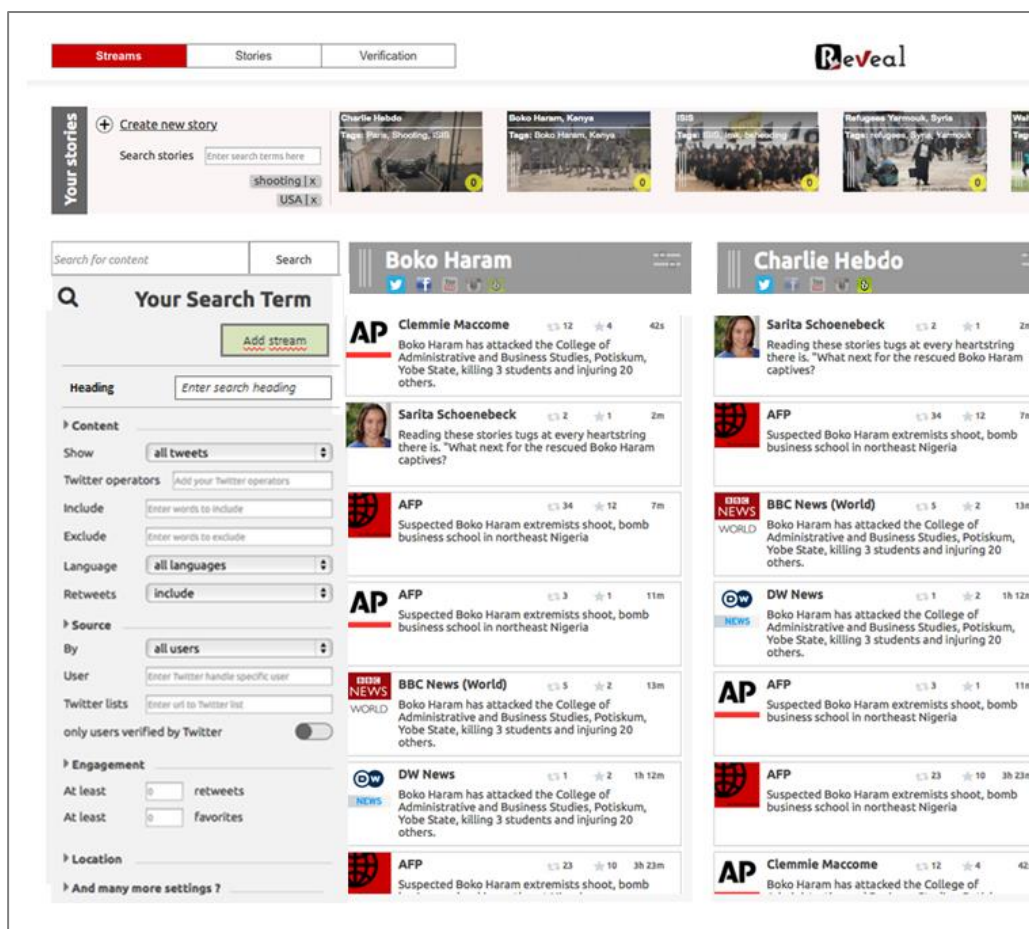


Figure 8. Visualisation of suggestion #11. Provide the filtering mechanism in the heading, where the user can choose one, several or all. Remove the filtering mechanism for social media services from advanced searches.

2.1.5.5 Streams to present top content?

The participants in all groups wanted the streams at times to include only top content from each social media service rather than everything. However, the participants of all groups also reported that at times it would be beneficial to see all content.

The participants in Group 1 suggested that top content should be default for any stream, whereas the participants in Groups 2 and 3 suggested that the journalistic context should decide whether all or top content should be shown. This implies that it will be important for the participants to easily toggle between all and top content.

For users to be able to do such toggling easily, it may be beneficial that the notion of what constitutes top content for each social media service is pre-set. For example, for Twitter, instead of having to ask for content that has been retweeted X times and favourited Y times, the REVEAL system could dynamically identify the top content for Twitter on the basis of the relative number of interactions in a given time interval.

Table 11. Key issues and suggestions – issues 12–13

| # | Issue | Suggestion | Pri. |
|----|---|--|------|
| 12 | The context of use is decisive for whether or not it is useful to present top content or all content in a stream. | Make toggling between top/all content immediately available for each stream. | High |
| 13 | It is important for journalists to get an overview of top content, but it may be challenging to determine the criteria for top content for each social media service. | Provide a default definition of top content for each social media service supported, for example on the basis of the relative number of interactions in a given time interval. | High |

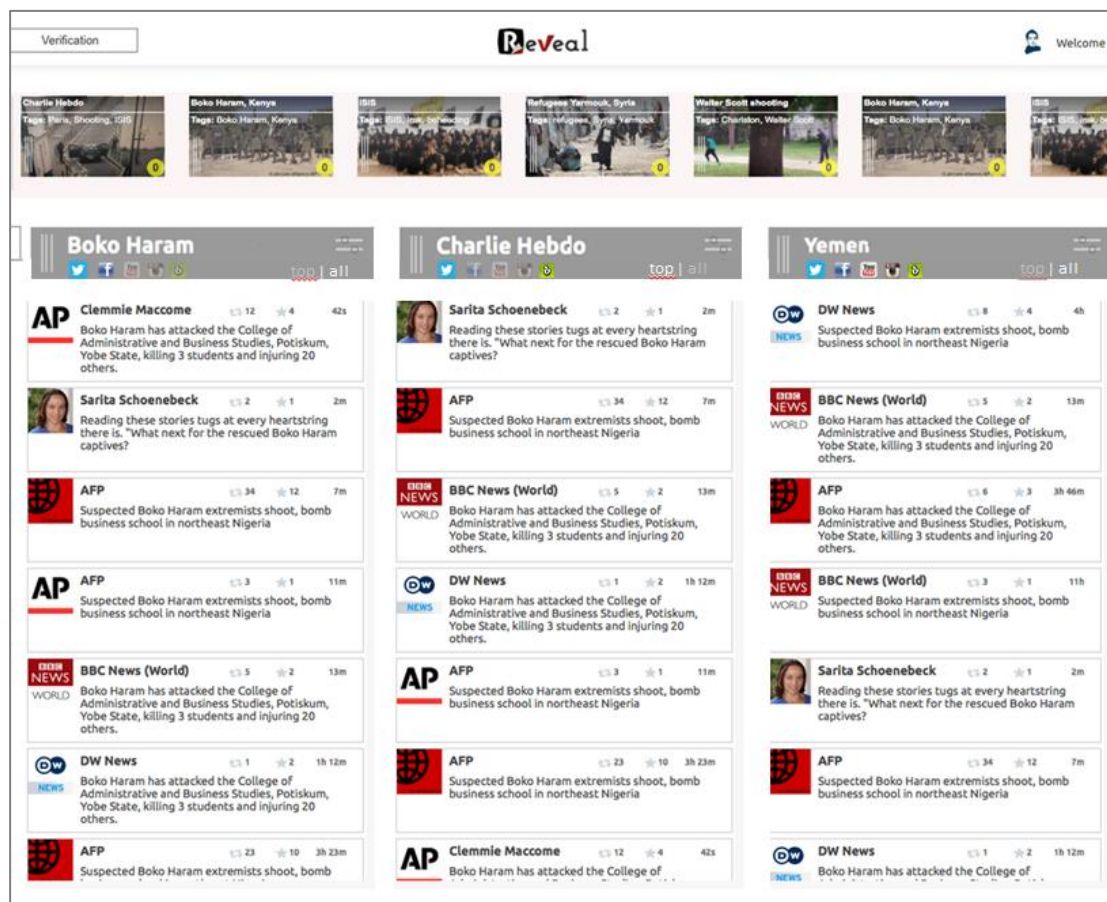


Figure 9. Visualisation of suggestions #12 and 13. Option for toggling between top and all content visualised in the stream heading.

2.1.5.6 Possible to exclude news agencies?

The participants in all three groups argued that the streams could be useful to be updated on the latest content from both regular users of social media, other media houses and news agencies. However, the participants in Group 3 noted that it could possibly at times be nice to be able to filter out content from other news agencies, as such content is easily available through other services used by the journalists. This is particularly important for ongoing events / breaking news, as it then may be difficult to identify raw on-site user-generated content from the overload of news agency content. A suggestion could be to include a search criterion where it is possible to filter out news agencies, such as AFP (something that may already be thought of in the "Source/By" filter).

Table 12. Key issues and suggestions – issue 14

| # | Issue | Suggestion | Pri. |
|----|---|--|--------|
| 14 | For some contexts of use, it may be useful to exclude content from news agencies. | Include a search criterion where it is possible to filter out news agencies, such as AFP (something that may already be thought of in the "Source/By" filter). | Medium |

2.1.5.7 Possible to include a translation service?

The participants in Group 2 suggested that it would be a potential useful addition to the service to provide an easy translation option. Maybe it could be possible to use Google translate for this purpose? (Provided the translation of relatively short texts is reasonably accurate.)

Table 13. Key issues and suggestions – issue 15

| # | Issue | Suggestion | Pri. |
|----|---|--|------|
| 15 | For some contexts of use, it may be useful to have easy access to the translation of content. | Consider whether to provide an easy translation option, for example as a "translate" button for each social media content in the stream. | Low |

2.1.5.8 Search criteria

The participants in Groups 2 and 3 were invited to suggest other search criteria that could be beneficial to include when setting up or editing a stream. The participants suggested that it could be beneficial to search source age and gender, but also marital status and political preference. (Privacy issues associated with storing information on the basis of political principles?)

2.1.5.9 Easy overview of trending topics

The participants missed the opportunity to easily get an overview of trending topics and to easily be able to make streams on the basis of relevant trending topics. The lack of a trending topics overview was assumed to make the REVEAL application more cumbersome to use, as users then have to consult other tools (e.g. Twitter) to get an overview of trending topics and then use these topics to set up new streams manually. Trending topic streams should be fast to set up rather than requiring a detailed set-up procedure for a rapid overview of the trending topics judged as interesting by the journalist.

Table 14. Key issues and suggestions – issues 16–17

| # | Issue | Suggestion | Pri. |
|----|--|--|------|
| 16 | Trending topics are important for journalists when using social media as a news hub. Trending topics are currently not supported in the mock-up. | Include trending topics as a supplement to defined streams. Visually this could be presented as a list immediately below the list of streams in the right hand panel. | High |
| 17 | It will be important to support the easy exploration of trending topics. | Support the exploration of trending topic the same way as streams, by dragging these to the main panel. Require easy, optional saving or deletion of the stream following exploration. | High |

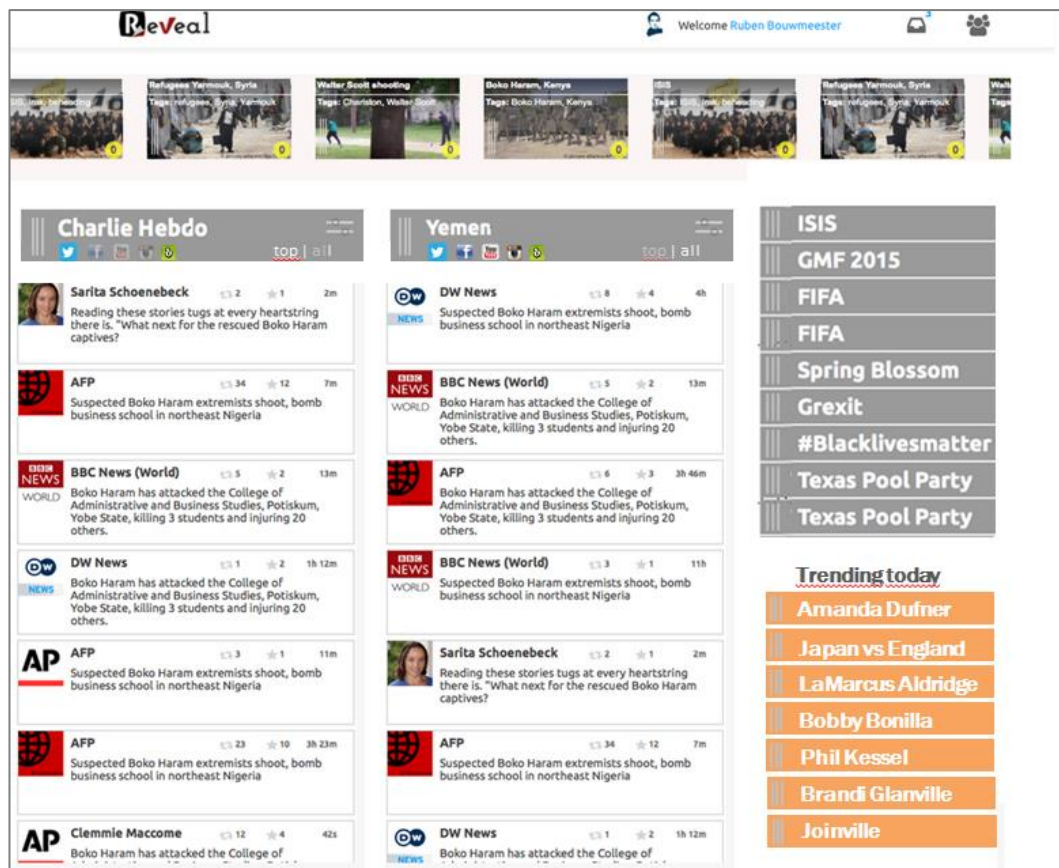


Figure 10. Visualisation of suggestion #16. Trending topics made available as a supplement to streams, made available as a list in the right hand column.

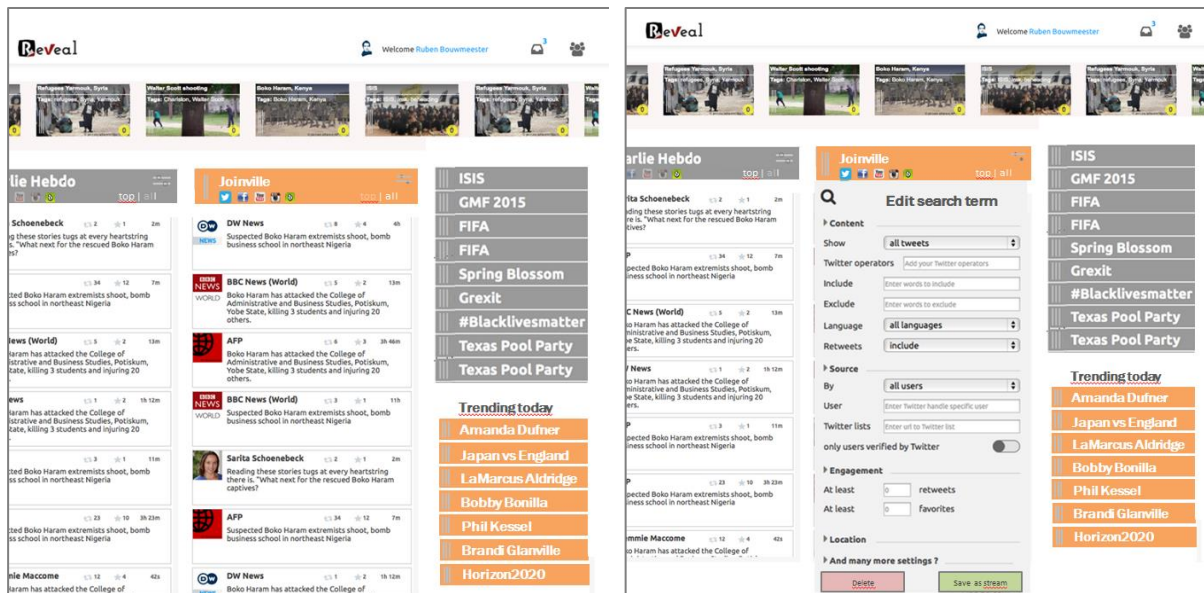


Figure 11. Visualisation of suggestion #17. A trending topic can be explored as a stream by dragging it to the main panel. The trending topic can also be edited and saved as a stream.

2.1.6 Stories

2.1.6.1 The concept of stories is not immediately appreciated

The concept of stories was not immediately appreciated by the participants in any of the groups, unlike the concept of streams. This was due to several issues, as reported below.

2.1.6.2 The concept of stories is not intuitive

Before having the concept of stores explained to them, it was not intuitive to the participants what the stories were. They disagreed as to whether a story possibly could be something to be published, whether it rather would be a place where relevant content is gathered as background, or whether it could be a mini-sketch for a story in progress.

Table 15. Key issues and suggestions – issue 18

| # | Issue | Suggestion | Pri. |
|----|--|--|--------|
| 18 | The concept of stories is not intuitive, particularly regarding whether stories are something to be published. | Consider changing the name of stories to something more accurately describing the function, for example "collections". | Medium |

2.1.6.3 Failure to see the full benefit of stories

When the moderator explained the concept of stories to the participants, they failed to see the full benefit of stories. The participants in Group 1 argued that they would often rather want to just "favourite" or "like" content in a particular stream. That is, they failed to see why content should be moved to a story and not just immediately liked. Separating streams and stories was seen as potentially problematic, as one then has to keep track and update both a story and the associated stream, and not just update the stream.

The participants in Groups 2 and 3 argued that they would often rather integrate the social media content directly into the story they were writing than having to first sort the social media content into stories.

The moderator suggested that a benefit of stories could be to collect content across streams, or collect only parts of the relevant content of a stream. That is, one stream could be used to generate multiple stories. However, as the current REVEAL mock-up suggests that streams and stories mostly overlap, this possibility was somewhat downplayed. For example, because the stream Charlie Hebdo corresponds to the story Charlie Hebdo, it was seen as unnecessary for these to be separate.

On the basis of this criticism of stories, it may be speculated that the concept of stories needs to be clarified. In particular, it is important to show why stories are something more than just the favourites marked in a particular stream. Or, if there is a one-to-one correspondence between streams and stories, the concept of stories may need to be changed accordingly.

Table 16. Key issues and suggestions – issues 19–20

| # | Issue | Suggestion | Pri. |
|----|--|--|------|
| 19 | Marking content as interesting by dragging and dropping it to a story may be too cumbersome. | Consider whether the user should be able to tag content as interesting just by marking it directly in the stream. | High |
| 20 | Some (or most?) stories may overlap with their corresponding stream. For example, a story on Charlie Hebdo may include only content from the stream on Charlie Hebdo. This implies a maintenance challenge, where the user needs to set up and maintain both a stream and a story on the same topic. | The user should not have to set up a story to overview content marked as interesting in a particular stream. Rather, content marked as interesting in a particular stream could be displayed in the same way as content in a story, for example by clicking on the stream heading. | High |

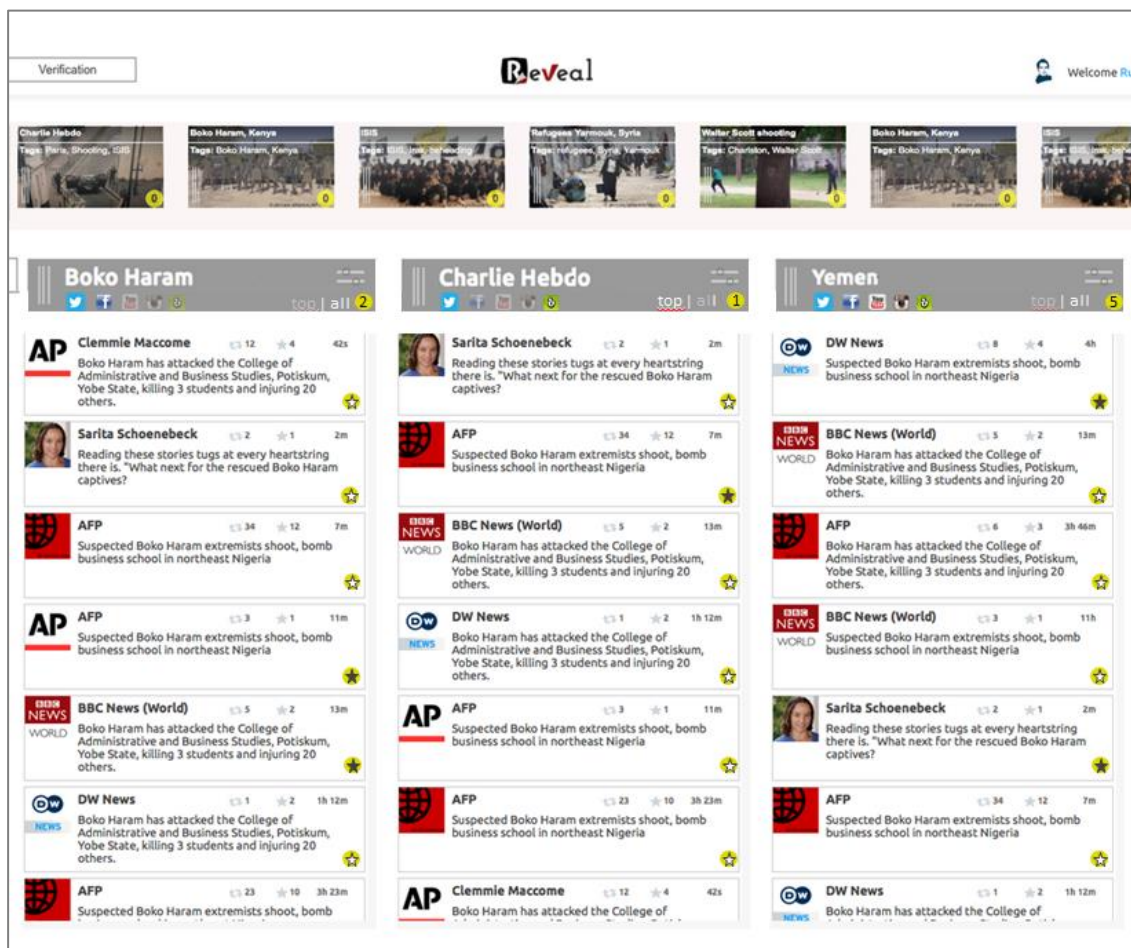


Figure 12. Visualisation of suggestion #19. Content may be marked as interesting by clicking a yellow icon. As the content is marked, the counter in the stream heading increases by one.

2.1.6.4 Storing of social media content for reference

The participants in Group 3 argued that it is important for journalists to be able to store social media content as a personal record. The reason for this is that social media content may be deleted by the source, for example when politicians Tweet controversial opinions and later delete the Tweet to avoid public embarrassment. Today, the participants in Group 3 reported that journalists may use screen dumps as such personal records. It would be beneficial for the REVEAL application to be able to provide the same kind of personal record.

Table 17. Key issues and suggestions – issue 21

| # | Issue | Suggestion | Pri. |
|----|--|---|------|
| 21 | It is problematic if content that is marked as interesting or dragged into a story is later modified or deleted by the source (or others). A record or the original is needed. | Whenever content is marked as interesting or dragged into a story, an as-is record of the content should be stored and made easily available to the user. | High |

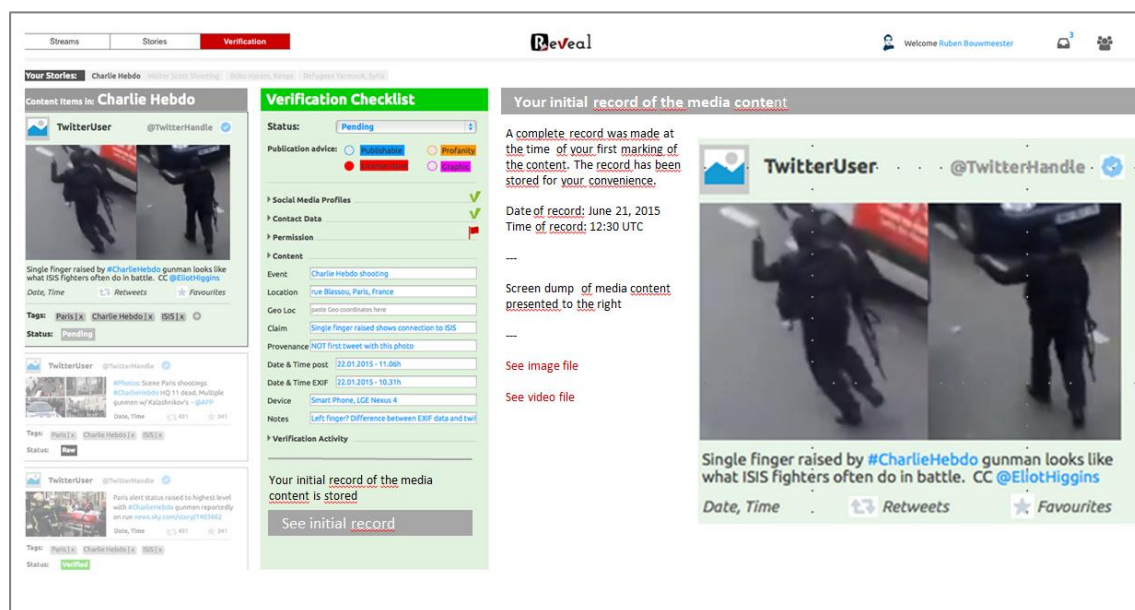


Figure 13. Visualisation for suggestion #21. An as-is-record of marked content is stored for later retrieval. Retrieval may be done through the verification checklist. When requesting the as-is-record, a screen dump or similar of the content files are made available.

2.1.6.5 Stories may be useful in cases of collaboration

The participants of all groups argued that while they failed to see the benefit of stories for typical, small-scale, every-day journalistic work. However, they indeed saw its benefit for larger projects, particularly for stories to be developed over a longer period of time, developed in collaboration between multiple journalists or reported from unfolding events (where, for example, stories could be used for handover at work shifts).

2.1.7 Sharing stories with colleagues requires that the whole newsroom uses the REVEAL application

The benefit of sharing stories between journalists was discussed in the group. It was argued that such sharing would require that all the journalists belonging to the same newsroom to use REVEAL actively. (How will this fit with the idea of verification experts as target groups?) Some questioned whether the journalists would appreciate REVEAL as yet another social network to engage in. However, others saw the benefit of the sharing of streams and stories across the newsroom.

2.1.7.1 Challenging to have REVEAL adopted as a new publication platform

The functionality of adding one's own content to stories suggested to the participants that the REVEAL platform is intended to support parts of the work that the journalists today do in specialized publishing platforms. The participants suggested that making journalists move their publishing work from their current publishing platforms to REVEAL would be very challenging, as this would imply a major change in their way of how they work. It may be speculated that the work process that is supported well in current publishing platforms will not easily be transferred to the REVEAL application.

2.1.8 Verification

2.1.8.1 Verification appreciated as a supplement

The participants appreciated the verification support provided in the REVEAL application. In particular, they appreciated that the solutions are intended to include metadata that they see as important in the verification process, such as source, date/time and geolocation.

2.1.8.2 Verification preferably involves the contacting of sources

The participants kept coming back to verification as a process preferably involving direct contact with sources. They reported that, even though with the REVEAL application available, they would prefer contacting the source of any content before using it in a story. However, they also argued that for some contexts, particularly for situations involving great time pressure, it might not always be possible to contact such sources.

The participants reported that in their current practice they would not use social media content in a story without proper verification, for example by contacting the source by phone. That is, they saw social media as a means to identify interesting topics, sources or content, but a means only to be used together with other journalistic approaches.

Table 18. Key issues and suggestions – issue 22

| # | Issue | Suggestion | Pri. |
|----|--|---|------|
| 22 | A key means of verification for social media content is the checking and contacting of the source. (This may often be the only means of verification for the content; hence, an in-depth verification process in the REVEAL application may not be needed for this purpose.) | Make information on the source easily available directly from the social media content in the stream (as in suggestion #3). | High |

2.1.8.3 Documentation of the verification process

The participants in Group 2 argued that one benefit of the REVEAL application could be to document one's own verification work. This could be particularly useful as decision support in controversial cases (for example when the editor is in doubt as to whether the newsroom should break the story or not), or to document verification in cases in which the journalist has used sources or content that is later debunked.

2.1.8.4 Thorough verification process overkill in most situations

The participants in Groups 2 and 3 argued that the thorough verification process suggested in the REVEAL application only is practically feasible for some content and only for particular types of journalistic work. Leading up to this, the participants in Groups 2 and 3 discussed whether verification was equally critical in all types of news stories. It was suggested that for some stories written to generate clicks, journalists may in some cases be more relaxed concerning verification. The participants also noted that in many cases it would be sufficient to post unverified content as long as one has made the proper reservations, such as stating that the content has not yet been verified. However, all agreed that it would be troublesome or embarrassing to be the author of a story that was later debunked. In addition, Group 3 argued that the news media the last 4–5 years have become more mature concerning verification in social media.

For most uses of social media content for journalistic purposes, a thorough verification processes may be a showstopper. In Group 3, it was argued that if journalists are required to comply with a thorough verification routine as part of verification, the REVEAL application will not be adequately used by most journalists. As expressed by one of the participants: *"Here we have reached a point where I would no longer use the system"*.

This issue is particularly challenging, as collaborative verification may require that most journalists in a newsroom use the system on a regular basis. At the same time, the participants in Group 3 argued that it might not be realistic to use the verification module for most purposes.

Table 19. Key issues and suggestions – issue 23

| # | Issue | Suggestion | Pri. |
|----|--|--|------|
| 23 | The need for verification and the process of verification will be diverse depending on the context, the journalist and the newsroom. However, most journalists are likely to require a fast and easy verification process. | Support a flexible verification process. Allow for most social media content not to be formally verified, and for very brief verification processes (for example as in the off-line contacting of a source). | High |

2.1.8.5 The challenge of time and resources

The participants, however, saw that in due time, when employed in a newsroom, time pressure may make verification in social media more challenging, particularly for breaking news. Here, the participants in all groups considered the lack of time the greatest challenge to verification, not the lack of technical resources.

2.1.8.6 Who should do the verification?

The participants in Groups 2 and 3 discussed who should actually do the verification. Verification skills are held not to be equally distributed among journalists, and it was argued that some verification processes (such as image verification) require particular technical expertise. It was suggested that rather than seeing verification as something every journalist should contribute equally to, it may be more useful to use the REVEAL application to involve particular verification expertise when needed. One important implication of this may be to see REVEAL as more of a cross-disciplinary collaboration platform than what it is now, where different persons hold different roles. Perhaps journalists could use the REVEAL platform to request verification support from particularly skilled personnel?

Table 20. Key issues and suggestions – issue 24

| # | Issue | Suggestion | Pri. |
|----|---|--|--------|
| 24 | Verification in social media may require a specific competence, which is not held by all journalists. | Need to make it easier for journalists to request the help of competent personnel or experts for particular verification challenges. | Medium |

2.1.8.7 Collaboration on verification requires trust in colleagues

Following up on the previous issue, the participants in Group 3 brought up an interesting point. They argued that the collaborative verification process outlined in REVEAL requires that the journalists actually trust their colleagues to do adequate verification. If all users are considered equal in terms of doing verification, the trust in the verification process may be challenged. One possible way to mitigate this issue (though not suggested by the participants) would be to clearly indicate who has conducted the verification.

2.1.8.8 Support for provenance analysis appreciated

The participants reported to particularly appreciate the support for provenance analysis provided by the REVEAL application.

2.1.8.9 Module of access to other images from the same date/location

As part of the verification process, the participants suggested to make available other images from the same date/time and geolocation as the image being verified for comparison. It was suggested that such comparison could potentially be supported in the Panoramio plugin.

Table 21. Key issues and suggestions – issue 25

| # | Issue | Suggestion | Pri. |
|----|--|--|------|
| 25 | The verification of images may be supported by seeing other images from the same location at the same date/time. | Module for showing images from same data/location as the target image. | Low |

2.1.9 Ethical concerns

The participants in Groups 1 and 2 spontaneously discussed ethical issues concerning the content presented in the REVEAL application, particularly the possibility that REVEAL could provide them with content that could be questionable from an ethical perspective. For example, Tweets by eye witnesses immediately following an accident could be problematic to use as content, as the eye witnesses could be in shock. Or geolocated content could be problematic, as users do not always know how privacy settings concerning positioning work. It might be relevant to consider including "ethical questionable" as a classification possibility, on the same level as "profanity", "graphical" or "copyright issues".

Table 22. Key issues and suggestions – issue 26

| # | Issue | Suggestion | Pri. |
|----|--|---|------|
| 26 | There may be ethical issues connected with the publication of social media content. It could be useful to make an optional note of this as part of the verification checklist. | Consider including "ethical questionable" as a classification possibility, on the same level as "profanity", "graphical" or "copyright issues". | Low |

2.1.10 Detailed comment on the mock-up – repeated visual elements were confusing during evaluation

Some participants in all three groups were confused by the use of repeated visual elements in the prototype, and also that some of the visual elements did not belong to the context in which they were put.

- **Repeated content:** In the screens presenting streams and stories, the same Tweets are used repeatedly. For example, a Tweet by AFP is shown 6 times on the streams main page.
- **Content out of context:** In the screen presenting streams, some of the example content is out of context. For example, an AFP Tweet on Boko Haram is included in the Charlie Hebdo stream.

When we explained the nature of the mock-up, the participants of course understand that these are just examples of content. Even so, the use of repeated content and content in erroneous contexts seems to represent an unnecessary source of confusion that can easily be fixed in the mock-up.

2.1.11 Extended background discussions: Digital divides in the use of social media for journalistic purposes?

In the background section, the participants were also asked whether they saw divides in the use of social media in terms of journalist experience or gender. The findings from these discussions have no direct implications for the REVEAL application, but are reported below for completeness.

2.1.11.1 Only minor divides due to journalistic experience

The participants in Group 1 reported to find the use of social media a well-established practice in the newsrooms with which they had experience. In particular, they reported to find the older and more experienced journalists in the newsrooms to be just as savvy on social media as themselves, if

not more. They suggested that if there indeed was a divide, this could be in terms of the services that are used; the experienced journalists more typically use only Twitter and Facebook, whereas the younger also use other services, typically Instagram.

The participants in Groups 2 and 3 were somewhat more divided, as they saw some of the more experienced journalists as savvy on social media, but others as more reliant on traditional journalistic methods and networks. However, these groups also saw experienced journalists as somewhat more narrow in their use of social media services (Facebook and Twitter) than the younger journalists (who also use Instagram or other services such as Tumblr).

It was suggested that journalists' use of social media could be more an effect of their work context rather than their age. For example, journalists in smaller newsrooms were argued to be more likely to be social media users, whereas larger newsrooms could include journalists that did not relate to social media.

2.1.11.2 Divides due to gender?

The participants were somewhat divided in their view on digital divides in journalists' use of social media due to gender. The participants in Groups 1 and 2 did not agree with the suggestion from the moderator that there might be a gender gap in the use of social media for journalistic purposes. The participants in Group 1 neither saw gender as relevant for the frequency nor the type of social media use in journalism. The participants in Group 2 argued that gender had no influence on what social media services were used, but that gender could be decisive concerning one's willingness to participate in debate.

The participants in Group 3, however, suggested that there may be some difference between the genders in terms of social media services (Twitter somewhat more preferred by males, Instagram somewhat more preferred by females) and in terms of social media use (males somewhat more oriented towards debate).

The suggestions of Group 3 correspond to survey findings for the population at large. The perspective of Groups 1 and 2 may possibly suggest that among journalists, the gender gap is perceived as smaller than in the population at large.

2.2 Interviews and user test with young journalists

We conducted a series of open-ended individual interviews with 15 young journalists between June and October 2015 to evaluate the REVEAL-mock-up and to validate the findings from the group interviews. Key sample characteristics are provided in Table 23.

Table 23. Sample of interviewed young journalists (N=15)

| Characteristics | N |
|------------------------|----------|
| <i>Gender</i> | |
| Males | 6 |
| Females | 9 |
| <i>Country</i> | |
| Spain | 7 |
| Norway | 8 |
| <i>Work</i> | |

| | |
|--|----|
| News reporters in television | 2 |
| News reporters at newspapers | 7 |
| News reporters in a news agency | 2 |
| Feature journalist at a newspaper | 2 |
| <i>Education and work experience</i> | |
| Autodidact in journalism | 1 |
| Graduated in journalism | 12 |
| Still student (working part time) | 2 |
| Working full time as a journalist | 13 |
| Several years of work experience | 12 |
| <i>Main type of social media at work</i> | |
| Twitter | 15 |
| Facebook | 14 |
| Instagram | 11 |

Three selection criteria were used for sampling: first, they should be young people who grew up with social media; second, they should be individuals professionally engaged in journalism working for a news organisation or contributing to a news organisations' output; third, to extend the breadth and cultural dimension of the data sample, they should be based in two different European countries. Seven journalists were recruited from Spain and eight from Norway (see the context of this study below).

Interviewees ranged from 21–26 years old with a median age of 23; nine were women and six were men. While there is no agreement on a specific age definition among authors who make use of the digital natives concept, we focused on journalists who were young teenagers (born between 1989 and 1995) when social media such as YouTube and Facebook become popular (i.e. Facebook natives). Interviewees were further selected based on their experiences working with news, breaking news and other more in-depth types of news, while two of the participants mainly worked with feature content. All used social media, such as Facebook, Twitter and Instagram for their work continuously throughout the day. "Main type of social media for work" in Table 23 refers to the type of social media they used most extensively at work. "Several years of work experience" in Table 23 denotes to two or more years of work experience, which was true of 12 of 15 journalists.

Spanish participants were recruited through the research team's own networks by asking veteran journalists at different media outlets to select younger journalists based on their news journalism experience, while interviewees from Norway were recruited by contacting major news organisations and their news editors and asking them to select young news journalists.

Given the overall research questions of how young journalists are using and experiencing social media, and how these journalist are shaped by social media affordances and their previous experiences with social media, as well as the implications for networked opportunities and concerns related to verification and content overload, the interview schedule addressed (a) the interviewees' choices, motivations and experiences with social media, both private and work; (b) typical tools and approaches used for journalistic research and verification, as well as the conventions of these verification practices; and (c) their personal understanding of how their previous uses and experiences with social media are influencing their working practices and

journalism (e.g. how these might reflect the norms of the news organisations where they work). Interviews were audio-recorded, transcribed and then coded using QDA-miner, a qualitative coding software, according to categories derived from the issues emergent in the questions asked and the interviewees' responses. All the interviews, analysis and coding of the transcribed interviews were conducted by the same two researchers.

The qualitative research approach was supplemented with an online survey that was distributed to the participants to gather more precise details of their usage patterns and experiences with social media verification tools (one of 15 interviewees did not respond). We used both open questions and five-point Likert scale questions (e.g. "How important (from very important (1) to not important (5)) is Facebook for you working as a journalist?").

2.2.1 Social media practices among young journalists

Similar to the group interviews, we found that the journalists in our sample use several different social media for professional purposes, such as Facebook, Twitter, Instagram, blogs, YouTube, LinkedIn, Snapchat and Vine. These young adult journalists are comfortable with social media. They tend to use a larger variety of social media than veteran journalists, who mainly report using Twitter. Our participants perceive new social media, such as Instagram and Facebook, as important news sources; many also reported finding Facebook and Instagram more important journalistic tools than Twitter. This generational divide among journalists in the use of social media is already evident in the Global Social Journalism Study (2015), but our in-depth interview study can additionally explain why and how the new generation of journalists is using social media. Furthermore, our findings indicate some cultural differences.

Among the participants in this study, the Spanish journalists relied more often on Twitter than the Norwegian journalists. This is demonstrated partly by Table 24 below, showing the use of social media among Spanish and Norwegian journalists, and is illustrated by a quote from Homero, who works for a newspaper in Spain:

My colleagues and I are connected to Twitter all day because through it we know the breaking news. For example, the other day we knew that Fernando Alonso [a Spanish Formula 1 driver] would not drive the next race because of Twitter. The media had not said anything about this, and we had not read it anywhere. Thanks to Twitter and Fernando Alonso's account, we knew the news first. (Homero 24, SP)

Spanish journalists also frequently used Twitter to reach out to experts and victims or eyewitnesses for stories. However, Facebook could also be an important channel in such cases, as expressed by Rosa:

For example, in the coverage of train accident in Santiago de Compostela two summers ago with many fatalities, Facebook was a useful tool that we used to contact the victims and the families of those killed [...]. Using Facebook, we got the human side of the story, not just statements from official sources. (Rosa, 23, SP)

Female journalists and Norwegians were typically more into Instagram, as illustrated by a quote from a Norwegian female journalist below:

I use Instagram to find stories; I spend a lot of time monitoring and stalking on Instagram and really, I just like looking at people that are relevant to what I'm doing — who they tag, what they put out, what they are interested in, what friends and connections they have and whom they send shout outs to (Guro, 25 years, NO)

As seen in Table 24, Twitter is used by many in this sample. But when we asked about the degree of importance of different social media, four Norwegian journalists valued Twitter as very important, while the entire sample of Spanish journalists reported the same. This is rather surprising, as none of the Spanish journalists reported using TweetDeck, which is quite useful when following several different streams and accounts on Twitter, while among the Norwegian journalists this tool was widely known (see Table 24).

Table 24. Young journalists in Spain (n= 7) and Norway (n = 7) and their use of social media at work. Notes TweetDeck is a curating service for Twitter.

| Social media | Spain (n) | Norway (n) | Total (N) |
|---------------|-----------|------------|-----------|
| Facebook | 6 | 7 | 13 |
| Twitter | 7 | 6 | 13 |
| YouTube | 7 | 5 | 12 |
| Instagram | 5 | 6 | 11 |
| LinkedIn | 5 | 4 | 9 |
| Blogs | 2 | 6 | 8 |
| TweetDeck | 0 | 5 | 5 |
| Online forums | 1 | 4 | 5 |
| Snapchat | 1 | 4 | 5 |
| Vine | 4 | 0 | 4 |
| Google+ | 2 | 1 | 3 |
| Other | 1 | 2 | 3 |

Interestingly, five of the Norwegian journalists reported Instagram to be important, while only two of the Spanish journalists agreed with this. Norwegian journalists, compared with Spanish journalists, also considered Facebook and blogs more important for work.

Overall, Spanish journalists in this sample ranked Twitter and YouTube more important, whereas Norwegian journalists ranked Facebook and Instagram more important. Spanish journalists also used Instagram, but their use was mainly personal; most of them did not use Instagram for journalism. The use of Facebook and Instagram mirrors the existing social media habits of young people, among whom these social media are very popular. One tentative interpretation of the differences between Spanish and Norwegian journalists is that the social media habits of Spanish journalists are more incorporated into the organisational routines and culture of their newsrooms, while the Norwegian journalists have more freedom to experiment with new tools because the newsroom culture in Norway is more individualistic. Moreover, many young journalists' working practices in social media are influenced by their previous and existing usage patterns for leisure and

private purposes. This provides a benefit in social affordances in terms of a new social system, but at the same time offers a challenge because their professional and private identities become blended in their social media use and experiences.

2.2.2 The verification challenge

Young journalists grew up in an online environment in which they are used to misleading information. However, the young journalists in this study reported very little knowledge of online verification and fact-checking sites. Google Image was known by approximately half of the journalists, but most of the services listed in Table 25 were unknown to them. There are several reasons why the majority of the young journalists in this study do not know of or use most of these services.

Table 25. Young journalists in Spain (n= 7) and Norway (n = 7) and their use of verification and fact-checking services.

| Services | Spain (n) | Norway (n) | Total (N) |
|----------------------|-----------|------------|-----------|
| Google Image Reverse | 3 | 2 | 5 |
| Hoax-Slayer | 0 | 0 | 0 |
| Storyful | 1 | 0 | 1 |
| Snopes | 2 | 0 | 2 |
| FactCheck.org | 0 | 1 | 1 |
| Facebook American | 0 | 1 | 1 |
| Politifact | 0 | 0 | 0 |
| Sulia | 0 | 0 | 0 |
| TinEye | 0 | 0 | 0 |
| FotoForensics | 1 | 0 | 1 |
| Trackur | 0 | 0 | 0 |
| InformaCam | 0 | 0 | 0 |
| None | 0 | 2 | 2 |

2.2.2.1 Lack of education

Six of the seven Spanish journalists claimed that they did not learn about such services as part of their journalism education. Their professors are digital immigrants; hence, the journalism curriculums are old and static, not taking into account the newest developments in online communications and verification challenges. One of the interviewees claimed that classroom theory was distant from newsrooms practice.

2.2.2.2 Verification and fact-checking services are not adopted by the newsrooms

Moreover, verification routines including verification and fact-checking services are not present in the Spanish newsrooms in which the young journalists were working. Typically, these journalists were aware of a work pattern incorporating existing organisational routines.

“There are standards and rules to verify content on social media. I think that’s important and, in that sense, we are lagging behind” (Pedro, 23, SP), confirming previous research and concerns about journalism students not learning state-of-the-art practices for evaluating the credibility of social media sources². However, journalists working for click-based news outlets reported being more prone to ignore verification issues. None of the interviewees were part of such click-based working environments, but they knew about people working in them. Others also reported difficulties related to various online modalities, with video on YouTube and photos from social media in general seen as particularly difficult to verify. This was often related to insecurities about content authorship or copyright.

Similar observations were expressed by the Norwegian journalists. One said, “Oh I didn’t know that this kind of services existed, but I find them very exciting and useful” (Guro, 25, NO). Another, when she saw the list, responded: “I wish I had a course to learn more about these kinds of services. My biggest fear is being busted for using fake facts or photos” (Anna, 23, NO). Others, however, claimed that this is something they have learned to handle while growing up:

I have grown up with social media. This is the way I work, and I have always worked with social media. I can’t remember a time without it. I have, in a way, grown up to be critical. We, as young people, understand the dynamics on social media in a more nuanced way than the older age groups. We have also failed many times in our past and therefore learned [social media] to a greater degree. (Ragnar, 25, NO).

Both these participants expressed some of the most striking views on how young journalists are experiencing social media. First, they fear being busted for using flawed information, because of how harmful the consequences would be for them as young people starting out. This would include not only consequences at work, but also severe harassment on social media. Second, the social media environment and culture in which young journalists have been raised affects and even determines how they are coping with content and the verification of such content.

2.2.2.3 Sceptical of verification services

Moreover, a fair proportion of those interviewed reported to be very skeptical of verification and fact-checking services and said that they would never take information verified by them for granted. They could not trust information from them alone, but only as one of several sources in the fact-checking process:

In general, I would not trust one in particular, but they can give me a clue as to what thread to pull. I would not trust 100% on this alone. For example, FotoForensics — I guess that it tells you if there is a photo manipulation. I would not trust directly what this software says; I would prefer to call an expert and say: “Hey, look at this.” (Laura, 24, SP)

Moreover, as Sara and others explain, they would like to know if the particular verification service were recommended by their newsroom:

² Tylor, J. (2015). An examination of how student journalists seek information and evaluate online sources during the newsgathering process. *new media & society*, 17(8), 1277-1298.

I must know that some professional actors are endorsing this verification service, not only me, and it should also be used and certified by my own newsroom. I am very skeptical of such things because new tools like this are popping up on the Internet all the time. (Sara, 24, NO)

With this in mind, verification is a process that they need to take an active part in by calling up and checking sources manually rather than using online services. Automated services or other kinds of verification services are seldom something they trust alone. Both Spanish and Norwegian journalists expressed that they would need more information and corroboration rather than rely on fact-checking-verification services per se. In terms of affordances, then, such sites might be a starting point for research and verification, but do not provide solid answers and will not replace traditional manual journalistic verification methods. This is in line with recent research confirming that journalists not only cross-check information from Google searches, Facebook and Twitter accounts, but also combine this practice with old, manual journalistic verification methods. This suggests that young journalists are not totally dependent on social media and their logic, which may also explain their grown-up experience of being inherently skeptical to everything online.

2.2.2.4 Feedback on the REVEAL application

When presenting the REVEAL application for these journalists (the same mock-up as for the group interviews), we confirmed the findings from the group interviews.

When testing the mock-ups, the participants reported to be confused by the current design. Mainly, they struggled to find the logic in the workflow of the application, and they typically asked for concrete functionality to verification processes, rather than streams and stories. They found the mock-up concept to be complex in the sense that verification process was long and tedious. Hence, they were all claiming the importance of having the option to verify easily and fast.

Moreover, the journalists reported to find the concept of streams were difficult to understand and (similar with the group interviews) they were not able to separate streams from stories.

In addition, and importantly, many of the journalists claimed that verification, particularly the verification of photos and videos, was something that verification experts in the newsroom were taking care of, and as such, not relevant for the ordinary journalists. One reason for this is that these tasks are complicated, and there are copyright issues that need to be taken care of by experts rather than ordinary journalists. This is again emphasizing the point that journalists find the concept more relevant for verification experts in the newsroom than the ordinary journalists. This finding makes it noteworthy to discuss the usefulness of the concept stories and that we have to focus on a particular target group of journalists, that works mainly with verification issues.

Based on these 15 interviews with journalists, we found no need to update the design suggestions based on the group interviews, rather they these interviews and user trials were confirming our findings from the group interviews.

2.3 Questionnaire survey – Journalist Application

This section describes the questionnaire survey of the Journalist Application. This questionnaire approach is following an Online Living Lab methodology. Online Living Lab refers to an online environment for design feedback (see D.7.1). This is a usability evaluation approach where user participants are asked to comment on and give feedback on design-suggestions. This approach has been regarded as valid in previous evaluation studies³.

2.3.1 Method

In June 2016 we launched a large scale questionnaire survey evaluation of the journalist application. We used an online questionnaire approach to enable design feedback from a larger number of users. This also made it possible to detect issues, and to reach out to potential users of REVEAL and early adopters. Involvement of final users that are external and potential early adopters is of utmost importance for feedback.

The questionnaires were developed based on previous findings in the formative evaluation, described in the previous section. With the help from ATC and DW we selected some key modules in the REVAL-application to be evaluated, that were presented in the result sections. These modules were visually presented with a description of key functionality and outcome. This measured the impressions journalists reported concerning the "usefulness" "ease of use" and how attractive or "compelling" ⁴ they found the modules in the news application. We used a 7-point Likert scale adapted from Tedesco and Tullis⁵, where 1 is "strongly disagree" and 7 is "strongly agree".

This Online Living Lab approach was chosen to measure the potential impact, behavioural intention to use, usefulness and the usability of the REVEAL platform. Using measures based on the TAM-model^{6,7}, the present evaluation shows that meaningful estimates of the degree of user acceptance

³ Følstad, A., Hornbæk, K., & Ulleberg, P. (2013). Social design feedback: evaluations with users in online ad-hoc groups. *Human-centric Computing and Information Sciences*, 3(1), 1-27.

Følstad, A., & Hornbæk, K. (2010). Work-domain knowledge in usability evaluation: Experiences with Cooperative Usability Testing. *Journal of Systems and Software*, 83(11), 2019-2030.

Følstad, A., & Knutsen, J. (2010). Online user feedback in early phases of the design process: lessons learnt from four design cases. *Advances in Human-Computer Interaction*, 2010.

⁴ Concepts that we have described earlier in this document (see section 2) and in the Evaluation Plan (D.7.1).

⁵ Tedesco, D., & Tullis, T. (2006). A comparison of methods for eliciting post-task subjective ratings in usability testing. *Usability Professionals Association (UPA)*, 1-9.

⁶ Davis, F. D. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. *International journal of man-machine studies*, 38(3), 475-487.

⁷ Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.

can be measured, even if the applications are only presented as prototypes or non-clickable screenshots as herein⁸. We tested the survey on various users before launching it.

To recruit potential users of REVEAL working as news journalists we distributed the online survey by using a list of emails over journalists working as news reporters in Western Europe and US. This list was delivered from our collaborating partner; the online intelligent firm Meltwater. We also branded the survey on Twitter via the REVEAL-network. However, 73% of the respondents were recruited from the email lists.

A total of 140 journalists responded to the survey, but only 82 completed the whole survey. We are in this section only reporting the feedback from the 82 journalists that responded to the complete survey. As this sample was the most motivated and probably also gave the more accurate response. 36 (44%) of the finale sample was females, while 46 (56%) was males. The age distribution of this sample is illustrated in Figure 14 below.

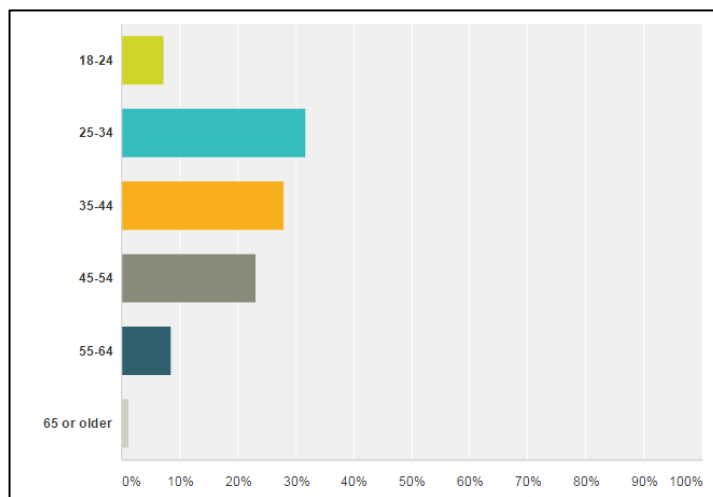


Figure 14 Age distribution of the journalist sample (N=82)

The table below gives an overview over the respondents and which country they currently work in as journalists. Most worked in USA (N =25) and Norway (N=24).

Table 26 Overview over respondents and their working country (N=82)

| COUNTRY | N |
|---------------|----|
| Germany | 10 |
| Great Britain | 9 |
| Greece | 3 |
| Norway | 24 |
| USA | 25 |
| Other | 11 |
| TOTAL | 82 |

⁸ Davis, F. D., & Venkatesh, V. (2004). Toward preprototype user acceptance testing of new information systems: implications for software project management. *Engineering Management, IEEE Transactions* 51(1), 31-46

We also asked what kind of stories the journalists primarily covered, most journalists were working with news, either on the local level, national level or international level, while politics, culture and business were important areas of concern.

Table 27 Overview over type of journalism covered by the sample (N=82)

| JOURNALISM | N |
|--------------------|----|
| Local news | 25 |
| National news | 40 |
| International news | 37 |
| Commentary | 23 |
| Feature | 27 |
| Politics | 46 |
| Sports | 7 |
| Culture | 22 |
| Business | 24 |
| Other | 23 |

The journalists worked mainly within the internet domain and in newspapers, as shown in table 28.

Table 28 Area of work (N=82)

| AREA OF WORK | N |
|--------------|----|
| TV | 14 |
| Radio | 10 |
| Magazine | 7 |
| Newspaper | 38 |
| Internet | 59 |

2.3.2 Experiences with social media and verification tools

Journalists use a variety of different social media when researching a story. Twitter is most popular together with Facebook, where over 65% say they use these social media on a weekly or daily basis. However, 20-30% use Snapchat, Whatsapp, Instagram and LinkedIn weekly or daily for the same purpose.

Table 29 Social media use when researching a story (N=82)

| | Never | Less than monthly | Monthly | Weekly | Daily | Total |
|----------------------|--------------|-------------------|--------------|--------------|--------------|-------|
| Facebook | 7.32% 6 | 12.20% 10 | 12.20% 10 | 26.83% 22 | 41.46% 34 | 82 |
| Twitter | 6.10% 5 | 14.63% 12 | 8.54% 7 | 24.39% 20 | 46.34% 38 | 82 |
| Snapchat or WhatsApp | 61.54% 48 | 10.26% 8 | 6.41% 5 | 15.38% 12 | 6.41% 5 | 78 |
| Instagram | 43.04% 34 | 16.46% 13 | 13.92% 11 | 22.78% 18 | 3.80% 3 | 79 |
| LinkedIn | 30.00% 24 | 21.25% 17 | 18.75% 15 | 30.00% 24 | 0.00% 0 | 80 |
| Other | 41.79% 28 | 16.42% 11 | 13.43% 9 | 16.42% 11 | 11.94% 8 | 67 |

When it comes to promoting a story, journalists are using Twitter and Facebook as well. 75% say they use Twitter weekly or daily, while 72% use Facebook.

Table 30 Social media use for distributing or promoting a story (N 82)

| | Never | Less than monthly | Monthly | Weekly | Daily | Total |
|----------------------|--------------|-------------------|--------------|--------------|--------------|-------|
| Facebook | 7.41% 6 | 8.64% 7 | 12.35% 10 | 35.80% 29 | 35.80% 29 | 81 |
| Twitter | 8.54% 7 | 6.10% 5 | 9.76% 8 | 25.61% 21 | 50.00% 41 | 82 |
| Snapchat or WhatsApp | 65.28% 47 | 15.28% 11 | 6.94% 5 | 6.94% 5 | 5.56% 4 | 72 |
| Instagram | 53.33% 40 | 12.00% 9 | 16.00% 12 | 14.67% 11 | 4.00% 3 | 75 |
| LinkedIn | 53.25% 41 | 18.18% 14 | 16.88% 13 | 11.69% 9 | 0.00% 0 | 77 |
| Other | 58.93% 33 | 3.57% 2 | 7.14% 4 | 17.86% 10 | 12.50% 7 | 56 |

We also asked how familiar they are with verification of content and sources in social media. 50% of the sample was moderately (25%) or extremely familiar (25%), while only 8% was not at all familiar.

Below we see in Figure 15 what kind of verification and fact-checking services they have used the last 12 months. Most of the tools are not used, except the Google Image Search verification tool, which almost 60% of the sample have experienced in the last 12 months. Snopes is also used, by 30% of the sample in the last 12 months.

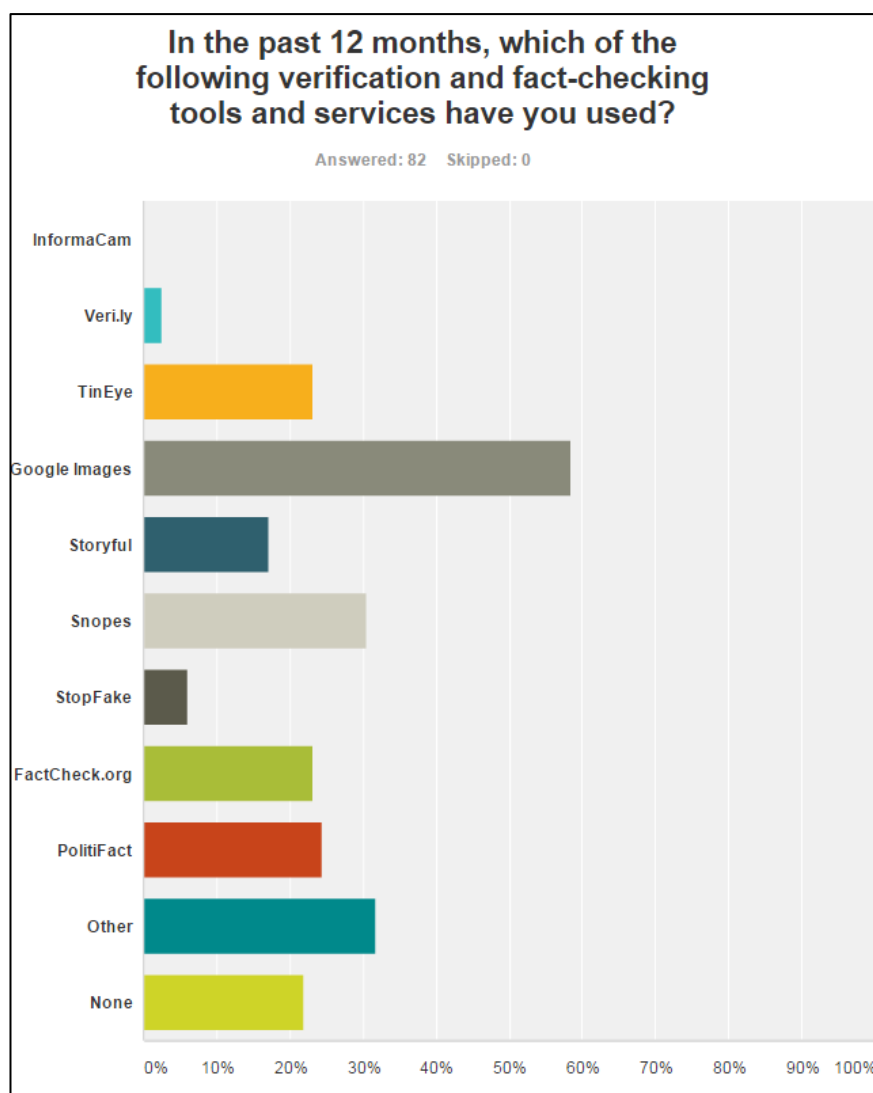


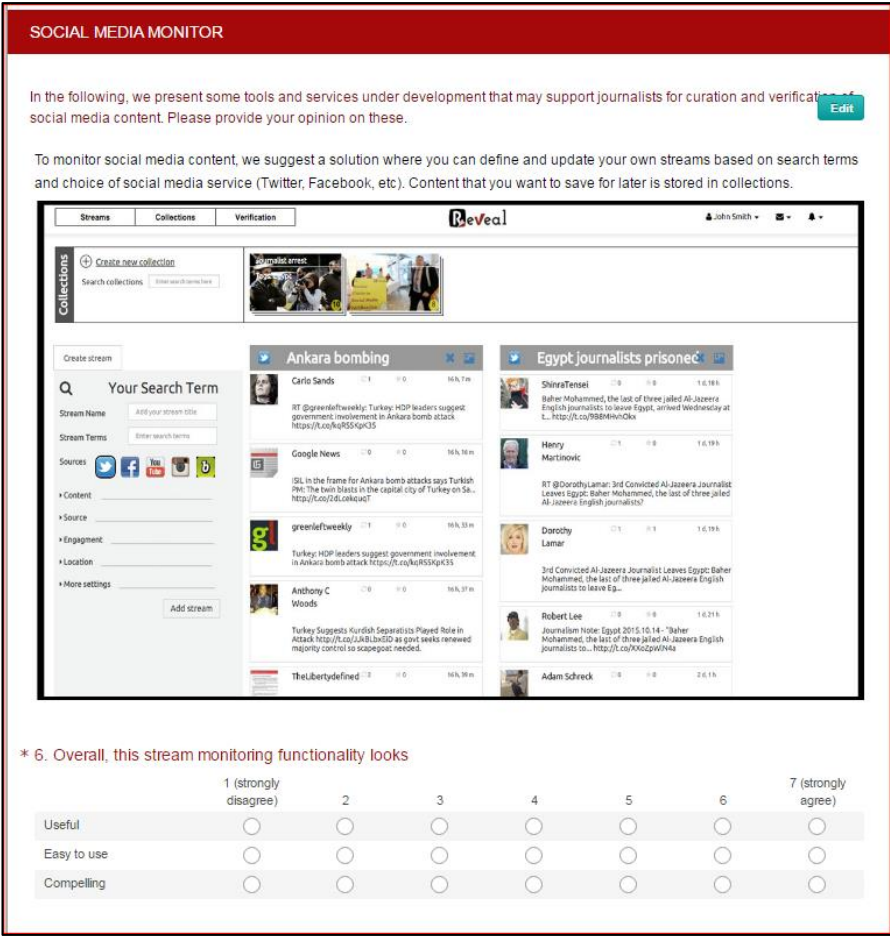
Figure 15 Use of verification/fact-checking services last 12 months in % (N=82)

2.3.3 Results - user evaluation

In the following, we present the feedback of the tools and services under development in the REVEAL-project as of June 2016. All the tools are developed to support journalists for curation and verification of social media content. We asked all the journalists in this sample to provide their opinion and impressions on these based on our 7-point Likert scale, as described in the method section.

2.3.3.1 The stream monitoring feature

Overall, most journalists were satisfied with this Social media monitoring feature, in particular concerning "usefulness", where over 50% rates between 5 and 7 on the 7-point Likert scale. Participants report to be least happy with the "compelling" side of the user interface.



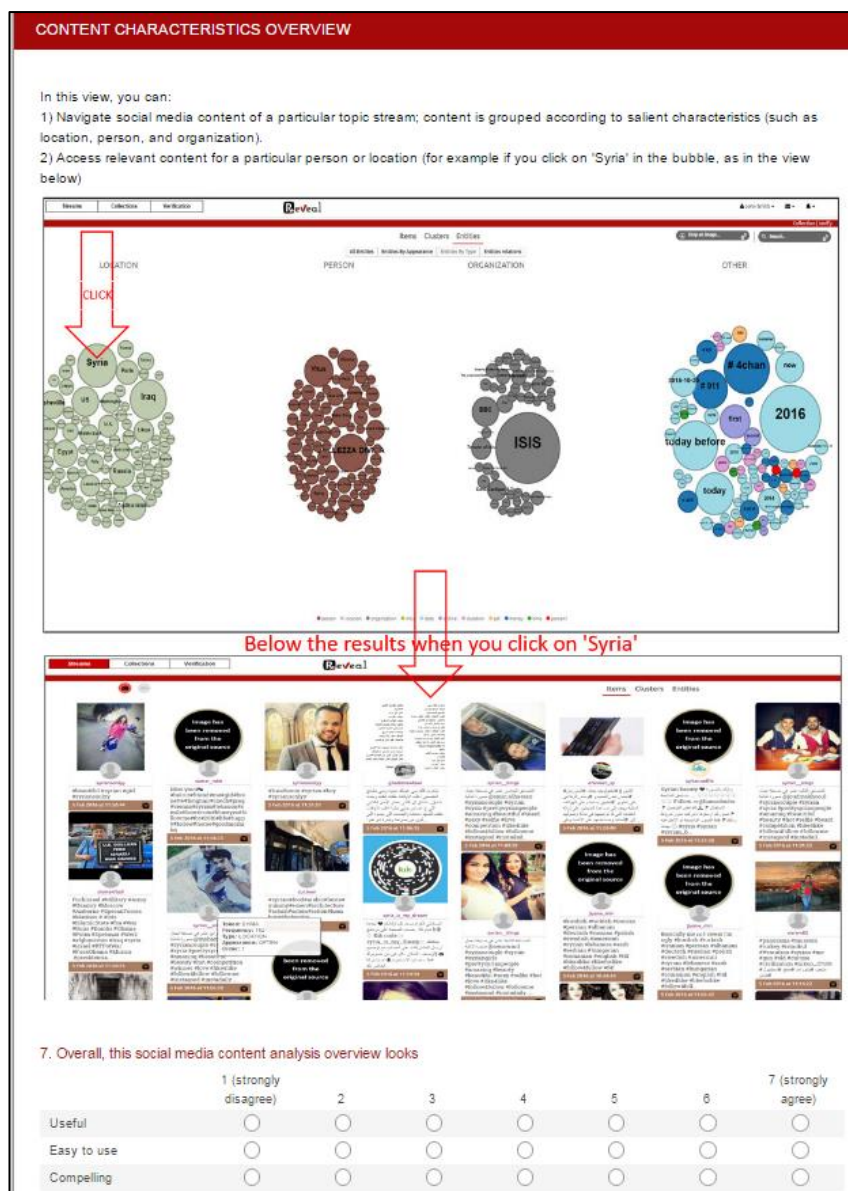
| | 1 (strongly disagree) (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (strongly agree) (7) | Total |
|-------------|---------------------------|--------------|--------------|--------------|--------------|--------------|------------------------|-------|
| Useful | 8.54% 7 | 13.41% 11 | 9.76% 8 | 13.41% 11 | 31.71% 26 | 20.73% 17 | 2.44% 2 | 82 |
| Easy to use | 12.20% 10 | 9.76% 8 | 12.20% 10 | 23.17% 19 | 29.27% 24 | 12.20% 10 | 1.22% 1 | 82 |
| Compelling | 7.32% 6 | 17.07% 14 | 10.98% 9 | 29.27% 24 | 20.73% 17 | 14.63% 12 | 0.00% 0 | 82 |

Figure 16 Social media monitoring and results

2.3.3.2 Overview of social media content

To further make it easy to navigate the social media content of a particular topic stream, REVEAL have set up a view where the content is grouped according to salient characteristics – such as location, person, and organization. Journalists, can then, for example, access relevant content for a particular location or person,

A majority of the journalists in this sample found this Social media content feature "useful". 55% of this sample scored between 5 and 7 on usefulness. However, "easy of use" are regarded a bit lower on this feature than other features evaluated, and may be regarded as more complicated to use than other features in the Journalist application. Over 12% says that the "strongly disagree" about "easy to use".



| | 1 (strongly disagree) (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (strongly agree) (7) | Total |
|-------------|---------------------------|--------------|--------------|--------------|--------------|--------------|------------------------|-------|
| Useful | 8.54% 7 | 13.41% 11 | 9.76% 8 | 13.41% 11 | 31.71% 26 | 20.73% 17 | 2.44% 2 | 82 |
| Easy to use | 12.20% 10 | 9.76% 8 | 12.20% 10 | 23.17% 19 | 29.27% 24 | 12.20% 10 | 1.22% 1 | 82 |
| Compelling | 7.32% 6 | 17.07% 14 | 10.98% 9 | 29.27% 24 | 20.73% 17 | 14.63% 12 | 0.00% 0 | 82 |

Figure 17 Content characteristics overview and results

2.3.3.3 Image verification tool

The image verification feature aims to assist media professionals in the process of detecting multimedia manipulations. Overall, the image verification tool received the best score among all the features we evaluated. Over 79 percent in this sample reported a score between 5 and 7 on usefulness (33% reported 7). In addition, our sample reported high scores for ease of use and compelling.

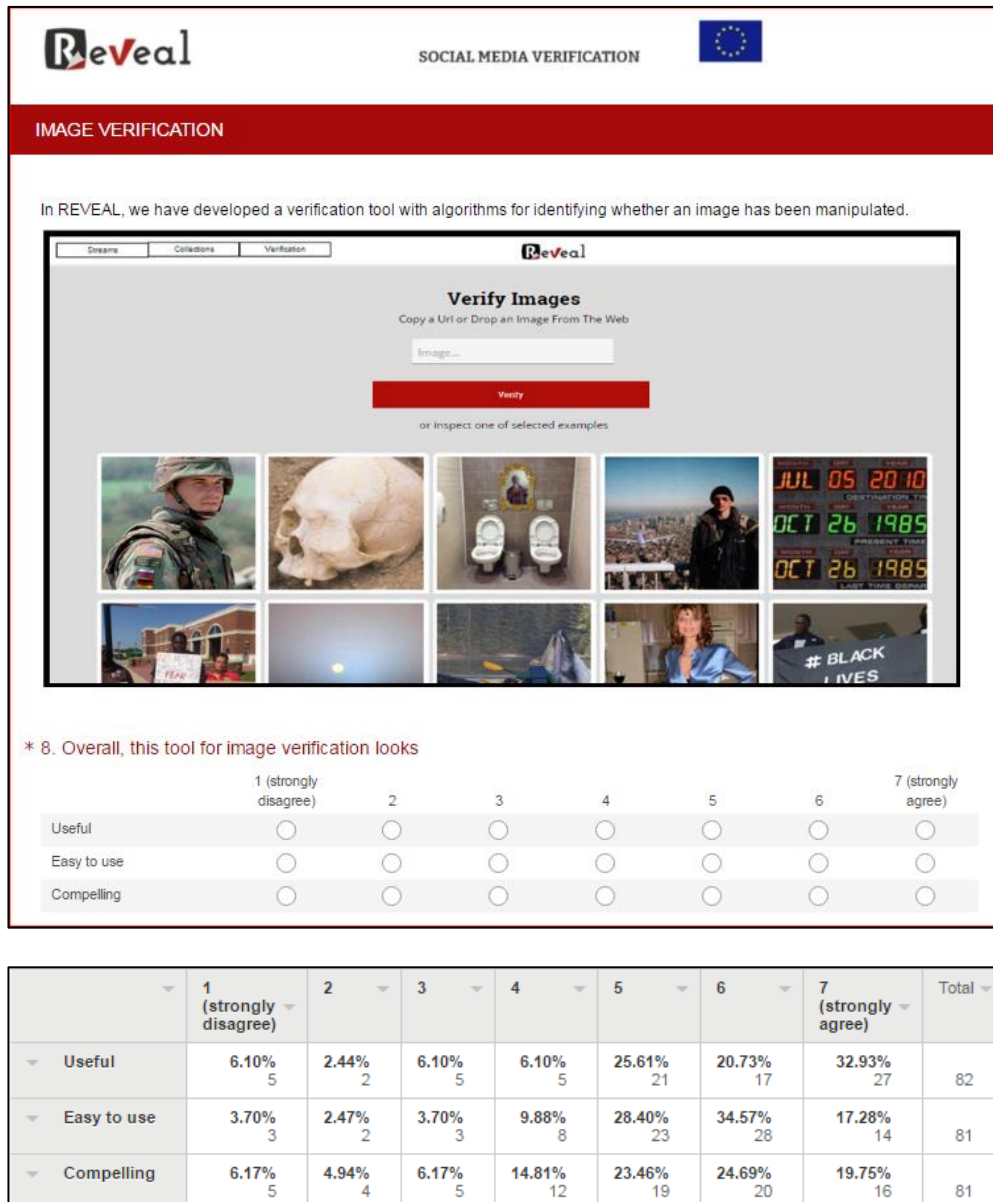
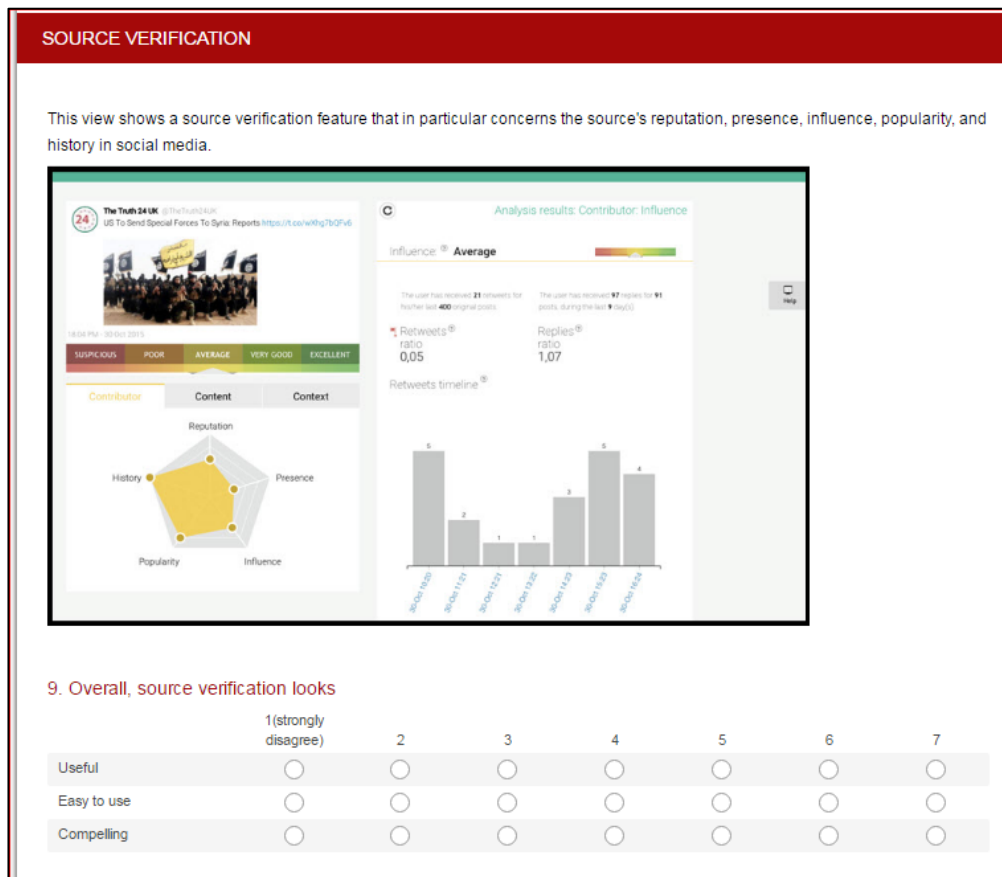


Figure 18 Image verification and results

2.3.3.4 Source verification

Our sample reported good scores on the usefulness of the verification feature, with 67% of the sample between 5-7 on "useful". Only 5% disagreed strongly that this verification feature not would be "useful" in their work. However, the journalists in our sample reported the same feature a bit less "easy to use" than "useful".



| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 | Total |
|-------------|-----------------------|------------|-------------|--------------|--------------|--------------|--------------|-------|
| Useful | 4.88% 4 | 1.22% 1 | 8.54% 7 | 18.29% 15 | 34.15% 28 | 20.73% 17 | 12.20% 10 | 82 |
| Easy to use | 2.44% 2 | 4.88% 4 | 7.32% 6 | 29.27% 24 | 29.27% 24 | 21.95% 18 | 4.88% 4 | 82 |
| Compelling | 6.10% 5 | 2.44% 2 | 10.98% 9 | 29.27% 24 | 26.83% 22 | 15.85% 13 | 8.54% 7 | 82 |

Figure 19 Results Source verification in % (N=82)

2.3.3.5 Verification board

The verification board is the heart of the REVEAL-application. In general, the verification board were reported to be "useful". 62% of the sample reported a score between 5 and 7. The verification board were, however, reported to be more "useful" than "easy to use" and "compelling".

VERIFICATION CHECKLIST


Here journalists are provided with a checklist for verification, in addition to an overview of the verification information pertaining to a particular source or image that the system has provided.

Streams Collections **Verification**

collections: Refugees Zika virus ISG Leipzig CHT16

Content items in: Refugees

The Arab Weekly @ArabWeekly



#Syrian #refugees ready to help rebuild #US towns
https://t.co/omkPibhnyw #Buffalo #New_York
https://t.co/laOCz8K9J

18:21:32, 5 Feb 1/3 0 0

Tags: US
Verification Status: **Verified**

Lywaa @lvilefer_

RT @harples: Cientistas descobrem que Zika vírus pode ser transmitido por opinião. Guarde sua opinião para você juntos vamos acabar com est...

18:28:58, 5 Feb 1/3 0 0

Tags: Zika Guernse
Verification Status: **Raw**

Rich @mulsje_rm

RT @AnyMek: Where R The Women? Where R The Elderly? Where R The Children? 10,000 Syrian War Refugees -> No, Muslim Terrorists! http://t.co/...

17:48:27, 5 Feb 1/3 0 0

No tags detected

Verification Checklist

Edit the story items properties.

Status: **Verified**

Publication advice:

☐ Publishable ☐ Profanity

☐ License issue ☐ Graphic

Social Media profiles

Contact Data

Permission

Content

Verification Activity

What Reveal found out

Select a story item from the left to find a summary of information that Reveal has found out for you. On the right hand side you will find the detailed information where available.

Social Media profiles

Fake Post Detector

Tags and links

Community

Contact Data

Content Data

* 10. Overall, this verification board looks

| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 (strongly agree) |
|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Useful | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Easy to use | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Compelling | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 (strongly agree) | Total |
|-------------|-----------------------|------------|--------------|--------------|--------------|--------------|--------------------|-------|
| Useful | 4.88% 4 | 6.10% 5 | 9.76% 8 | 17.07% 14 | 29.27% 24 | 20.73% 17 | 12.20% 10 | 82 |
| Easy to use | 4.88% 4 | 6.10% 5 | 17.07% 14 | 26.83% 22 | 21.95% 18 | 13.41% 11 | 9.76% 8 | 82 |
| Compelling | 3.66% 3 | 8.54% 7 | 20.73% 17 | 18.29% 15 | 28.05% 23 | 10.98% 9 | 9.76% 8 | 82 |

Figure 20 Results Verification board in % (N=82)

2.3.3.6 Intentions to use REVEAL and trust in automatic verification

In the end of the questionnaire, we asked if the participants would like to use these tools in their work – the same verification tools as those presented in REVEAL. We did this by asking the respondents if they agreed or not to the following statement: "Overall, if you had access to social media verification tools and services similar to those presented in this survey I would use these in my work". We also asked if they trusted such tools. Table 31 shows that the majority of this sample would like to use these tools. Over 65% of the participants are responding between 5 and 7 (strongly agree) to "I would use these in my work". The reported trust level in such tools are more mixed, were more journalists in this sample reported distrust than trust.

Table 31 Intentions to use REVEAL and trust

| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 (strongly agree) | Total |
|--|--------------------------|-------------|--------------|--------------|--------------|--------------|-----------------------|-------|
| I would use these in my work | 7.32% 6 | 3.66% 3 | 6.10% 5 | 15.85% 13 | 19.51% 16 | 21.95% 18 | 25.61% 21 | 82 |
| I would trust the automatic verification tools | 9.88% 8 | 11.11% 9 | 14.81% 12 | 40.74% 33 | 11.11% 9 | 7.41% 6 | 4.94% 4 | 81 |

To go in-depth in these issues, we also asked the respondents to explain their evaluation in an open question. In responses to the open question the majority find that they would like to use these tools in their work because they find it useful, while the trust issue was perceived more mixed by the participants for several reasons explained below.

2.3.3.7 Usefulness

First, concerning usefulness at work, one journalist expressed:

- Definitely something that could be really useful. There would be a period of adjustment but it could be a really good tool (**Great Britain, News journalist, 25-34 years, Male**).

Another journalist expresses the fact that he is not involved in journalistic work that makes these tools necessary:

- My work revolves around not-heavily-discussed tech news, so I'm not sure most of these are relevant to me. Cool concepts though. (**USA, tech-journalist, 35-44 years, Female**).

2.3.3.8 Trust

60% or 20 comments related to the trust issue. Some of the quotes may explain why there is a critical attitude towards automatic verification. One journalist would trust them if this was backed up by the organization and created by a well-known source:

- *I would trust them (the verification tool) if the tool was set up and created by a valid, well-known source. It would have to be backed by respected journalism organizations/media groups for me to OK it. (USA based news journalist , 25-34 years, Female).*

Others are genuinely critical towards tools that are based on algorithms, as everything in principal can be manipulated to demonstrate a certain opinion, as expressed by this journalist:

- *Because the set up of this tool can be manipulated too. For example, in your last example you can verify a media like Fox as influential and popular but you aren't measuring bias, while an unknown source, neither popular not influential, can be offering unique and truthful information on a certain topic. (Great Britain, journalists on international news, 45-54 years, Female).*

A third expresses more trust in human assisted tools than fully automatic tools:

- *If you by the question mean these are human assisted automatic tools I would give a higher score - of 7. If you mean they are fully automatic this is my 2 cents: With regards to my own experience in the field, I would find it less likely that a fully automated service could fact check an image/video and prove it's real with a score (between 1-100%) that it's high enough to be used in journalistic work. A computer could help sort and provide useful info, but never debunk a visual hoax the way a human can. (Norwegian news journalists, 25-34 years, Male).*

A fourth had some requirements to it like the need for compressed images etc.:

- *The algorithms for detecting manipulation of images sound interesting - as long as it works for compressed images and videos posted on social media as well as original high res files. I would not trust the outcomes, however, unless I could see the workings for myself, what tests the system had run, and be able to replicate the system's findings myself until I learnt exactly what I was seeing (USA based news journalist, 35-44 years, Male).*

Many respondents had a more pragmatic view, where they would use these tools as a supplement to other sources of verification, as expressed by the following participants:

- *I would certainly use the tool, but like to try to get at least two sources or more rather than trust any one. (USA news journalist, 65 or older, Female).*
- *I would still need to do my own research because our lawyers would want to see all of the evidence. (Great Britain, news journalist, 35-44 years, Female).*
- *The tools should be a supplement to the journalist's own verification, not to be trusted blindly (Norwegian news journalist, 35-44 years, Female)*

Or this more humoristic expression:

- *In God we trust, everything else I verify with multiple sources.(USA based news journalist, 35-44 years, Female).*

Overall, there are in a way two categories of journalists in this sample; those who trust and those who distrust automatic verification. Journalists that are sceptical towards such verification tools are in line with our findings from the interviews. The verification results must therefore be very transparent, so all journalists can explore the algorithms behind the system, and the verification system must be related to known organizations and promoted by the news organizations they work in.

2.3.4 Conclusion formative evaluation – journalist application

User tests with journalists and our interviews revealed the following suggestions for further work:

USEFULNESS

- **TARGET GROUPS - STORIES?** The target groups of the application must be clearer. Are stories really a relevant functionality if we are targeting verification experts? Are verification experts in need of functionality concerning content curation? These are important questions we should reflect upon when redesigning the application.
- **FACEBOOK:** We find Facebook to be the most important working tool among journalists. Hence, other social media should be considered in the subsequent design and development work (not only Twitter).
- **FILTER CONTENT FROM VARIOUS SOCIAL MEDIA:** Make filtering of content based on the different social media services (e.g. Instagram versus Facebook) immediately available for each stream.
- **COLLABORATION:** What type of collaboration is REVEAL aiming for? In-house newsroom collaboration? Collaboration between journalists across the world? (E.g. see "verification triggers")
- **TOGGLING:** Make toggling between top/all content immediately available for each stream.
- **TOP CONTENT:** Provide the default definition of top content for each social media service supported, for example, based on the relative number of interactions in a given time interval.
- **TRENDING TOPICS:** There is a need for functionality to support the exploration of trending topics. In the user interface this could, for example, be set up in a similar way as streams.
- **TAGGING:** Consider whether the user should be able to *tag* content as interesting just by marking it directly in the stream.
- **STORING CONTENT:** Whenever content is marked as interesting or dragged into a story, an as-is record of the content should be stored and made easily available to the user.

- **FLEXIBLE:** Support a flexible verification process. Allow for most social media content not to be formally verified, and for very brief verification processes (for example, as in the off-line contacting of a source).

USABILITY

- **SHORTEN THE VERIFICATION PROCESS:** Journalists in the user tests reported the verification process to be too long and complex.
- **LOGIC IN STORIES:** Journalists in the user tests reported that they do not understand the logic in stories.
- **SEARCH:** Support empty searches, to allow streams to show all content from, for example, a specific group of people or a specific geographical region.
- **MODALITIES:** Conduct rapid prototyping to identify how different modalities of social media content should be presented in the streams, particularly how images or video should be presented
- **VERIFICATION OF SOURCES:** Provide easy access to information on sources (contact details) directly from the social media content in the stream.
- **ADDING STREAMS:** Make it possible to add streams without other input from the journalist than just the search term.
- **EASY DELETE OPTIONS:** Make it easy to delete non-useful streams, for example as visible delete-option in the stream heading. (This, however, requires some kind of warning before deleting streams that have been configured more than just providing the search term).

USER EXPERIENCE

- **VERIFICATION TRIGGERS:** Provide triggers that nudge users to engage with verification work at the front page in the application, for example, by listing recent verifications, recent verification challenges, top verification contributors and trending topics in particular need of verification. The awareness of other users doing verifications can also prevent the duplication of verification tasks.

The questionnaire evaluation (N= 82) results are summarized in Figure 21, where the average score (lowest 1 and highest 7) for all the five features/modules in the Journalists application are presented, including the overall perception of the REVEAL-Journalists applications in total are compared.

All the major features in the REVAL-journalists application score quite high among the respondents. The Content analysis receive the lowest average score, while the Image verification receive the highest average score. The participants are on average also more happy with the usefulness of the features rather than "ease of use" and how "compelling" they find it.

Overall, respondents score on average 5 (quite strongly agree) that they will use the tools at work if they "had access to social verification tools and services similar to those presented in this survey".

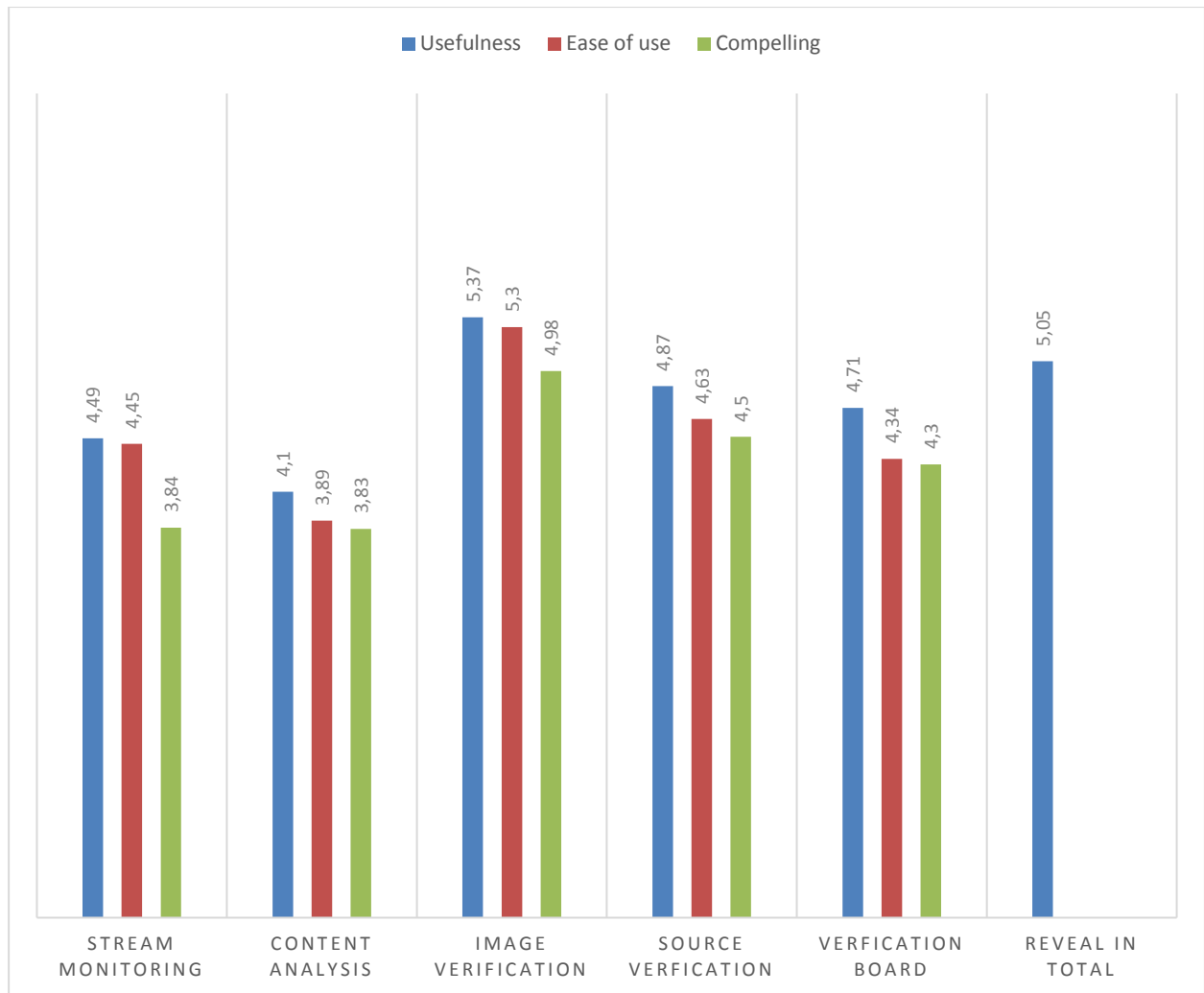


Figure 21. Overview over all the scores concerning all modules in the journalists evaluation (N=82). 1 = lowest and 7 = highest score.

In summary, most journalists find the tools in REVEAL useful and they want tools similar to REVEAL in their work. The image verification tools were regarded as most useful of all (see Figure 21).

However, the survey indicated that aspects such as trust to automatic verification and the experiences concerning "compelling" and "ease of use" still are issues to consider.

3 Formative Evaluation - Enterprise Application

In the formative evaluation concerning the Enterprise Applications:

We did the following evaluations:

- 1) Interviews and user tests
- 2) Questionnaire Survey

These will be presented in the next two sections.

3.1 Interviews and user tests with Enterprise workers

The following details the user-centric evaluation of the Enterprise application conducted in December 2015. Hence, this is part of the formative evaluations intended to generate input to the subsequent development process of the REVEAL framework in general and the Enterprise application in particular.

The process describing the user evaluation activities was developed based on: (a) D. 7.1. (User Evaluation Plan); (b) discussions at the 5th plenary meeting in Koblenz; (c) in a phone conference between ATC, SAG and SINTEF on the 24th of November; (d) and in communications via emails between the same partners. These communications led to agreements on specific evaluation targets, the process and responsibility for the recruitment of users, a detailed timeline for the evaluations and how the results should be formulated to be useful for the developers and testers.

3.1.1 Method and expected output

The evaluation consisted of semi-structured interviews with seven user group representatives (see user group section). These interviews integrated a user evaluation of the REVEAL Enterprise application based on key scenarios (see section on scenarios) established for this application.

The objective of this evaluation was to gain new knowledge about how communities can be exploited for purposes of innovation, customer care and marketing, and how the REVEAL Enterprise application can make it easier to achieve these purposes.

The output of the evaluations will be (a) insight into users' perceptions of the usefulness of the application; (b) the identification of potential usability issues; and (c) assessments of user experience with concrete implications concerning updates to user requirements, suggestions for redesign.

This section describes the target user groups, the prototype and the key constructs that we will use when evaluating the solution.

3.1.2 User groups and recruiting process

The target user groups of the evaluation are the following professional groups addressed by the REVEAL Enterprise application:

- **Community Managers:** Employees who plan and maintain the business community.
- **Product Managers:** Employees who investigate, select and drive the development of products and services, as well as being responsible for knowledge management related to the products.

We recruited seven participants by searching the business social network LinkedIn (30% of the population in Norway 18+ use LinkedIn), and identify user profile descriptions that match the profile of the target users' group. The user group was community managers or product managers in a private business company who should actively use social media, or user-generated content from social media, as part of their work. One of the participants was recruited from the SAG community. Key sample characteristics are provided in Table 26.

Table 32. List of participants in the enterprise evaluation

| Gender | Age | Work |
|-----------|-----|--|
| 1. Male | 41 | Product Manager, large media company |
| 2. Female | 32 | Social media/community manger – large hotel brand in Northern Europe |
| 3. Female | 39 | Product Manager, large media company |
| 4. Male | 46 | Innovation Manager, large media company |
| 5. Male | 50 | Product Manager, event and movie company |
| 6. Female | 36 | Product Manager, Nordic bank |
| 7. Male | 35 | Product Manager ARIS |

3.1.3 Prototype and scenarios

The target of this evaluation was the current prototype (as of 02.12.2015) of the REVEAL enterprise application. The prototype is available here, as illustrated in Figure 13 below: <http://reveals.atc.gr/revealenterprise/index.html>

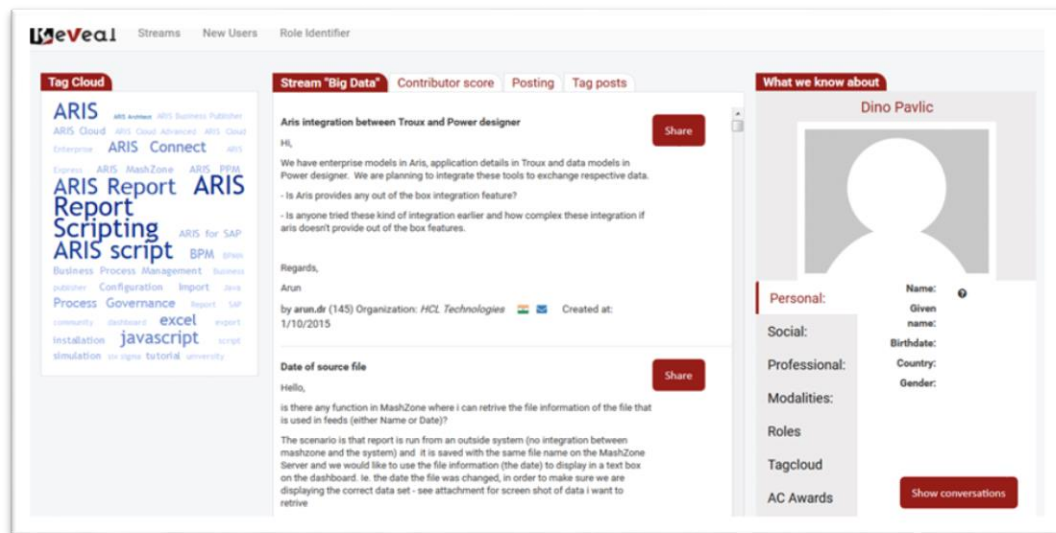


Figure 22. Visualisation of the Enterprise prototype

3.1.4 Usefulness, usability and user experience

The three key constructs in the user evaluation of the REVEAL prototype are (in verbatim from D7.1):

1. **Usefulness** concerns whether the REVEAL framework and applications are perceived by users to increase their job performance, given that the framework and applications have satisfactory usability. In other words, usefulness concerns whether the REVEAL framework and applications are perceived as necessary by users. ⁹
2. **Usability** concerns whether users are able to use the REVEAL framework and applications to achieve specified goals in an effective and efficient manner.
3. **User experience** concerns the users' subjective experiences with the REVEAL framework and applications. In particular, we see it as important to address the users' perceptions of privacy and trust.

3.1.5 The Scenarios

This section will describe the process of the semi-structured interviews and evaluation of the key scenarios for the Enterprise application. We listed questions to the potential end-users regarding each of the three scenarios. The most important scenarios that we focused on in the user evaluation are described below.

In each interview, we went through the scenarios sequentially. For each scenario, we aimed at the following:

⁹ These questions are partly derived from TAM: <http://www.measuringu.com/blog/usefulness.php>

- Identify current practices associated with the scenario topic.
- Describe the solution scenario, and let the user test the running prototype.
- Enquire on the perceived usefulness, usability and user experience of the prototype for the given scenario.

3.1.5.1 Innovation gathering scenario

The innovation gathering scenario relates to the development of products and services where it is essential to keep up-to-date with the business areas of the user enterprise (e.g. Software AG). Not only the new topics, but also the initiators of trends and the thought leaders have to be closely followed in social media and dedicated communities.

Table 33. Questions in the user evaluation

| | |
|--|---|
| User practices and challenges today | <ol style="list-style-type: none"> 1. How do you currently use your community for innovation purposes? Could you please provide an example? 2. Which challenges do you have when aiming to use the community for innovation purposes? 3. How do you identify influencers or opinion leaders in your community today? 4. How do you identify useful new ideas or emerging user requirements in your community today? 5. Do you have the tools you need at present to utilize the community for innovation purposes? How do you use these tools? Which needed tool support do you miss? |
| Usefulness | <ol style="list-style-type: none"> 1. How can the REVEAL application help you to better use your community for innovation purposes? 2. Which functionality in particular do you appreciate? 3. Which functionality do you miss? |
| Usability | <ol style="list-style-type: none"> 1. How do you experience the ease of use and user-friendliness of the REVEAL application? 2. Which potential problems or challenges do you see in the application? (navigation challenges? conceptual challenges (wordings/categories)? integration challenges?) 3. How could the application be used together with the interface you have for administrating the community today? What are potential challenges in combining the application with your current interface for administration? 4. Do you think the different categories and functions in this system are well integrated and easy to understand, or do you have other suggestions for functionality and categories? |
| User experience | <ol style="list-style-type: none"> 1. What would it take you to trust such a (technical) solution such as the REVEAL application? 2. Would a solution similar to the proposed REVEAL application have any implications for the privacy policy of your organisations? |
| Usefulness in general | Do you believe this scenario (wireframe) meets the requirements to detect initiators of trends and identify thought leaders? |
| Product managers | Does it say something about the influence and trustworthiness of contributors? |
| Community manager | Do the scores/rankings help you to offer the users as essential service to identify major influencers? |

3.1.5.2 Customer relation and support scenario

This scenario describes customers that are searching for a solution to a specific problem in their enterprise processes. Regarding this, they might post a respective comment in the ARIS Community

or in other social media. SAG products would likely provide a solution that other customers could benefit from.

For example, if an existing customer detected a bug in a product and posted it in the ARIS Community, employees from "support or customer relations" may contact the contributor and forward it to the development where a new patch is provided in the end.

Table 34. Questions in the user evaluation

| | |
|--|---|
| Current working practices and opportunities | <ol style="list-style-type: none"> 1. How do you currently use your community for customer support and relation management? Could you please provide an example? 2. Which challenges do you have when aiming to use the community for customer support? 3. How do you identify user problems or verify user solutions provided in the community today? 4. Do you have tools you need at present to utilize the community for customer support? How do you use these tools? |
| Usefulness | <ol style="list-style-type: none"> 1. How can the REVEAL application help you to better use your community for customer support? 2. Which functionality in particular do you appreciate? 3. Which functionality do you miss? |
| Usability | <ol style="list-style-type: none"> 1. How do you experience the ease of use and user-friendliness of the REVEAL application? 2. Which potential problems or challenges do you see in the application? (navigation challenges? conceptual challenges? training challenges? integration challenges?) 3. How could the application be used together with the interface you have for administrating the community today? What are potential challenges in combining the application with your current interface for administration? 4. Are the language and categories used okay and understandable? 5. Is there any inconsistency in this current solution that you want to point to? |
| User experience | <ol style="list-style-type: none"> 1. What would it take for you to trust such a (technical) solution such as the REVEAL application? 2. Would a solution similar to the proposed REVEAL application have any implications for the privacy policy of your organisations? |
| Product managers | Does this system help you to find out what, how and where in social media users discuss your product? |
| Community manager | Do you think you can support your colleagues with relevant data about product discussions in social networks? |

3.1.5.3 Newbies scenario

The goal of the newbies scenario is to offer help to the end-users in identify new users in social media as new customers or to determine their roles. For that reason, REVEAL has to create a clear profile of the contact. Is he or she interested in our products, or is he or she probably a competitor? Could he or she be a journalist or analyst?

Table 35. Example questions in the user evaluation

| | |
|--|---|
| Current practices working and opportunities | <ol style="list-style-type: none"> 1. How do you currently address newcomers in your community? What kind of information (if any) are you trying to gather on new customers? Could you please provide an example? 2. Which challenges do you typically have when meeting newcomers in the community? 3. How does your current tool support addressing and managing newcomers in the community? How are newcomers to the community addressed in terms of marketing purposes, or purposes of innovation or customer service? 4. Which needed tool support do you miss? |
| Usefulness | <ol style="list-style-type: none"> 1. How can the REVEAL application help you to better identify and address newcomers to your community? 2. How can the REVEAL application support you for general marketing purposes? 3. Will this solution support you daily work in identifying and addressing new customers, or in marketing in general? 4. Which functionality do you miss? |
| Usability | <ol style="list-style-type: none"> 1. How do you experience the ease of use and user-friendliness of the REVEAL application? 2. Which potential problems or challenges do you see in the application? (navigation challenges? conceptual challenges? training challenges? integration challenges?) 3. How could the application be used together with the interface you have for administrating the community today? What are potential challenges in combining the application with your current interface for administration for the purpose of marketing or identifying / addressing newcomers? |
| User experience | <ol style="list-style-type: none"> 1. What would it take for you to trust such a (technical) solution such as the REVEAL application? 2. Would a solution similar to the proposed REVEAL application have any implications for the privacy policy of your organisations? |
| Product managers | Offers the system the opportunity to identify new users as new customers or to detect their roles? |
| Community manager | Is the system appropriate to identify experts for other users and to outline the community as a network platform of and for experts? |

3.1.6 Results – user evaluation

Below we present the general results for the enterprise prototype, following the structure of the tables presented, concerning 1) working practices, 2) usefulness, 3) usability and 4) user experience.

3.1.6.1 Current working practices and opportunities

We find that enterprise workers are using various social media, including LinkedIn, Instagram, Twitter and Facebook, for different purposes: promoting their brand, innovation and to employ customer support. Facebook was the main social media, but some were also eager Twitter and LinkedIn users. Interviewees were also talking about Facebook at work (<https://work.fb.com>) that they regarded as a future community, and they were therefore questioning if this app also should include Facebook at work.

Table 36. Key issues and suggestions – issue 1 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|---|--|------|
| 1 | Enterprise workers engage in several different social media services. There is a need for more social media services. | Include social media services, such as LinkedIn, Facebook etc. into the functionality. | High |

We also found that both community managers and product managers are supervising niche communities according to their specific brand, such as, for example Tripadvisor if you are a community manager in the hotel business and a bank community if you are working in a bank.

3.1.6.2 Different services

Several of the participants mentioned many listening tools or services to help them to cope with the information overload in social media and to find influencers in their particular niche. The following list of online tools, "similar" to the REVEAL application, was reported in our sample:

- **Followerwonk** (<https://moz.com/followerwonk>) (Twitter analytics) to help users to find and connect with new influencers in their niche.
- **CircleCount** (<http://www.circlecount.com>) to find several rankings on CircleCount.com, e.g. the most followed and following persons or the most popular persons at Google+.
- **Nuzzel** (<http://nuzzel.com/>) Twitter, and a focus on top stories and influencers, basically a free social RSS reader for news stories shared by one's followers on Twitter.
- **Buzzsumo** (<http://buzzsumo.com>) different social media and content marketing, which also has a functionality to find influencers.
- **Notified** (<http://www.notified.com/>) Notified is a Swedish listening or social monitoring service that covers different social media.
- **Klout** (www.klout.com) to rank social media users according to online social influence via the "Klout Score".

Some of the topics related to these tools are illustrated in the following quotes:

"Influencers have the ability to help our brand and to make innovation possible. There are no tools out there to help me to narrow down the arena of social media users to a manageable list of people worth connecting with"(Product manager male, 46).

"I have used Followerwonk and Circle Count. Both are good. I still haven't tried Influencers Program; I will soon try that out, too. We also have an in-house dashboard, which has these tools giving you a list of influencers and much more" (Community manager, woman, 36).

In general, the search for influencers was very important, and some were really struggling to get in touch with influencers, which also illustrates that this is an important topic that should be worked on further in REVEAL.

3.1.6.3 Facebook as a customer service outlet

However, when dealing with customer support, the Facebook main page for their brand was their most important site to relate. They also felt that most customers gathered on this page when expressing concerns or requesting help. According to the community managers in our sample, companies have learned in recent years that making a good customer service, which means listening to these social media conversations and meeting them where they are, which is mostly true on Facebook. Notified was a typical tool that was used to monitor and listen to customers if the scale of the business was large.

3.1.6.4 Usefulness

In most cases, particularly concerning the innovation scenario, the interviewees reported a need to identify lead users or contributors, which means important customers that have an impact in the community and that come up with new ideas. All the interviewees reported that REVAL-like-solutions they had experienced so far at work were lacking this functionality.

Table 37. Key issues and suggestions - issue 2 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|---|--|------|
| 2 | Community managers and product managers need to find and identify influencers in an efficient way. This was regarded as very important. | The functionality of the application should include "finding influencers" as a main feature. Make the functionality visible. | High |

The newbie scenario was not considered relevant for product managers and community managers in this sample.

Table 38. Key issues and suggestions - issue 3 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|--|---|----------|
| 3 | Community managers and product managers do not find the newbie scenario relevant for their work. | The newbie scenario should be considered to be taken out. | Moderate |

When the community managers and product managers are looking for innovative ideas and practices in the community (e.g. Facebook and other social media), they report a need to separate internal and external communication, so they easily can make a distinction between the external users versus those users that are doing community support, which is expressed by the women in the following quote:

I struggle often to identify and sort to separate internal versus external communications in social media. This kind of information is being mixed in social media. (Community manager, woman, 36).

Table 39. Key issues and suggestions - issue 4 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|---|--------------------------------------|----------|
| 4 | Community managers and product managers | Functionality that makes it possible | Moderate |

| | | | |
|--|---|---|--|
| | struggle in separating internal and external communication. | for the user to filter between external and internal communication. | |
|--|---|---|--|

She was also referring to this problem when looking for influencers, as many of their own employees were active in social media and regarded as influencers.

The participants we interviewed did not intuitively understand the general usefulness of the application; hence, the application design is not communicating very well the purpose of the application. This is a crucial point that should be met by a new design that focuses on activities, rather than stories. The problem of understanding the purpose and usefulness of the application are illustrated by the following expression from a product manager:

I really have some difficulties in understanding how and why I should use this (...)... (Product manager, male, 46).

Table 40. Key issues and suggestions - issue 5 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|---|--|------|
| 5 | Community managers and product managers do not understand the purpose of the application. | Features and design in the interface that makes the purpose of the application clearer. This could be presented as some key activities on the front page of the application. | High |

Moreover, the interviewees were enthusiastic about automatic data gathering and filtering, as many of them experience information overload within the community they supervise. Unlike journalists, community managers and product managers have trust in the technology and algorithms that are helping them with the filtering and gathering process. Their profession is not dependent upon verification to the same degree as journalists.

Finally, some of the participants would also find it useful to filter between different social media (see the journalists' case).

3.1.6.5 Usability

When it comes to usability issues, there were many concerns reported by the interviewees.

Unfortunately, all the interviewees found that the interface of the mock-up lacked simplicity. The navigation was not regarded as very stringent, but rather confusing. They had problems finding key functionality in the current interface that could help them to navigate to their key tasks (e.g. finding influencers/not the streams). The participants reported that they found too much information to be shown in the interface, and the button “share” was regarded as too powerful in relation to its importance; bookmark functionality was suggested as being better. One of the participants described it this way:

Not very intuitive, it should be a little simpler. I cannot see what this is about. I think it's too much content. I wish it would be a bit clearer on what I as user can do about it, a little more like guiding the work process ... (did not find their way from the streams) (Community manager, female, 32).

Table 41. Key issues and suggestions - issue 6 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|--|---|------|
| 6 | Community managers and product managers found the usability of the application poor, and they were struggling to find key functionality. | Make the application simpler, with a high focus on usability. Key functionality should be highlighted in the interface. Try to avoid unnecessary information. | High |

Table 42. Key issues and suggestions - issue 7 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|--|-----------------------------|----------|
| 7 | The button "share" was regarded as too powerful in relation to its importance (see Figure 14). | Include a bookmark feature. | Moderate |

Second, participants in this study found the labelling of concepts to be very technical and far away from their own language, suggesting a clearer labelling of concepts, such as "contributor score", "posting", "tag posts", and "new users". "What do they mean, how are these functions helping me?" The participants also had problems navigating, for example, they struggled to find or understand the label "contributor score"?

Table 43. Key issues and suggestions - issue 8 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|--|---|------|
| 8 | The participants were confused by the meaning of the different labels. | The labels for different features used in this application should be revisited and tested. Typically, "contributor" should be changed to "influencers", which is the more common labelling in the user group. | High |

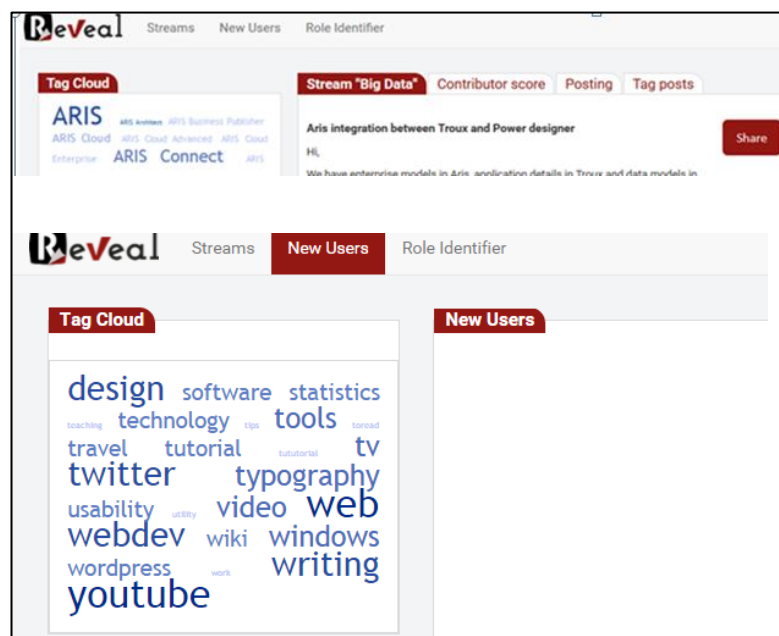


Figure 23. Visualisation of suggestion #8 (enterprise case). Labels such as "contributor score" should be changed.

During the interviews, it was found that the REVEAL application, at this stage, is not clear about the key user group for which it is aiming. Innovation and customer support are very different activities, and the REVEAL application should clearly distinguish these activities in the interface, with, for example, two different avenues. We suggest that these activities are clearly separated in the design solution. Clear, defined tasks will help the different user groups to understand the workflow.

Table 44. Key issues and suggestions - issue 9 (enterprise case)

| # | Issue | Suggestion | Pri. |
|---|---|--|------|
| 9 | Who are the key target groups and/or key activities for this application? Innovation gathering or customer support? | Customer support should be clearly separated from innovation gathering in the design — maybe the interface should have two different avenues on the front page of the application? | High |

As for the journalists, the product managers and community managers regarded the streams to be a bit confusing.

The data streams are something all these tools have. I don't need more data. I need to sort and identify important data and influencers to simplify my innovation tasks. (Product manager, Male 46)

Table 45. Key issues and suggestions - issue 10 (enterprise case)

| # | Issue | Suggestion | Pri. |
|----|---|---|------|
| 10 | The streams seem to work better for people working for customer support than innovations. | Consider skipping the streams and focus on how to find influencers. | High |

3.1.6.6 User experience

User experience with the application was regarded as poor by all the participants. As one of the product managers expressed:

I'm not really motivate to push the different buttons....(...) (Product manager, male, 46)

The user experience should therefore be enhanced by refining the design. All the community managers and product managers found the interface to be old, dull and boring. It is also key for the usability that the attractiveness of the user interface is improved. If people are going to use it, there is a need for more nudging or motivating buttons in the user interface.

Table 46. Key issues and suggestions - issue 11 (enterprise case)

| # | Issue | Suggestion | Pri. |
|----|---------------------------------------|--|------|
| 11 | The design is not motivating for use. | A new and fresher design solution is required to make the interface more attractive. | High |

3.2 Questionnaire survey – Enterprise application

This section described the questionnaire survey of the Enterprise application. The survey followed the Online Living Lab approach (described in section 2.3), where we used a questionnaire in online environment to present concepts to potential users of the Enterprise application for design feedback.

3.2.1 Method

In September 2016 we launched the questionnaire survey evaluation of the Enterprise application. We used a similar approach as to the journalist evaluation, to enable feedback from a larger number of users relevant to the Enterprise case. In such an online survey environment, potential users can respond to proposed concepts and tell us if these match their needs and desires, the challenges they see, as well as suggestions for redesign. This also makes it possible to detect potentially serious issues, and to reach out to various potential users of the REVEAL Enterprise application.

The questionnaires were developed based on experience from the journalists case, and previous findings in the formative evaluation in the Enterprise case. The sample was presented some central concepts and tools in REVEAL enterprise case, using descriptions of functionality and visual design concepts of the particular interface. These concepts represent key modules in the REVEAL-application¹⁰, and were chosen based on discussion and guidance from SAG and ATC. We measured how Enterprise workers experienced these modules on our three central evaluation aspects; "usefulness", "ease of use" and "general experience" or "compelling" ¹¹. We used a 7-point Likert scale adapted from Tedesco and Tullis¹², where 1 is "strongly disagree" and 7 is "strongly agree" (similar to the journalist survey).

Similar to the journalist case, this approach was chosen to measure the potential impact, behavioural intention to use, and usefulness of the REVEAL platform. Using measures based on the TAM-model^{13,14}, the present evaluation shows that meaningful estimates of the degree of user acceptance can be measured, even if the applications are only presented as prototypes or non-clickable screenshots as herein¹⁵. The general impression of the application was the most important to measure. We tested the survey on various users before launching it.

¹⁰ The key modules in the REVAL-application will be presented in the results section.

¹¹ Concepts that we have described earlier in this document and in the Evaluation Plan (D.7.1).

¹² Tedesco, D., & Tullis, T. (2006). A comparison of methods for eliciting post-task subjective ratings in usability testing. Usability Professionals Association (UPA), 1-9.

¹³ Davis, F. D. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. *International journal of man-machine studies*, 38(3), 475-487.

¹⁴ Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.

¹⁵ Davis, F. D., & Venkatesh, V. (2004). Toward preprototype user acceptance testing of new information systems: implications for software project management. *Engineering Management, IEEE Transactions* 51(1), 31-46

To recruit relevant and potential users of the Enterprise application we distributed the online survey in the SAG-network, but we also used a Facebook Ad targeting people that were product managers, community managers, or similar working with social media. Almost 80% of the respondents were recruited from the Facebook Ad.

To involve a broader segment similar to those of product managers and community managers, we rewarded participation in the survey with an entry to a raffle for which the prize was an Oculus Rift (approx. 560 dollars). Except for the potential bias of self-selection, we cannot see any other factors that should reduce the representativeness of the enterprise sample with respect to age or gender. The sample of users is regarded as relevant to the Enterprise case.

A total of 121 participants responded to the survey. Among these 90 completed the whole survey. We are in this section only reporting the feedback from these 90 participants that responded to the complete survey. As this sample was the most motivated and probably also gave the more accurate response. 21 (23%) of the finale sample was females, while 69 (77%) was males. The age distribution of this sample is illustrated in Figure 23 below. Most participants are between 25 and 44 years.

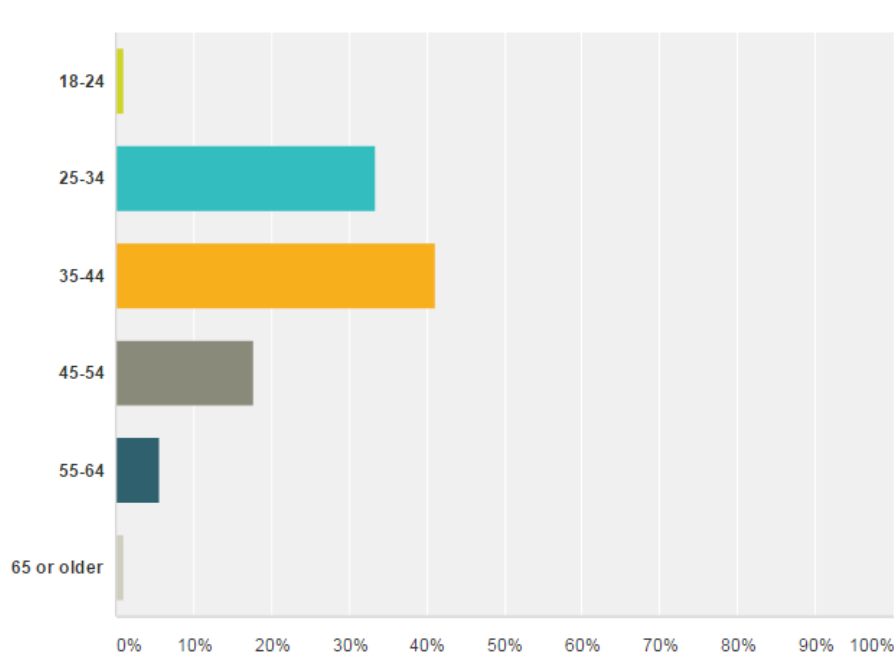


Figure 24 **Age distribution in percentage (N =90)**

Their positions varied from different types of manager work to more marketing related as seen in the table below.

Table 47 Overview over the Enterprise workers and their current position

| Work | N |
|----------------------------|----|
| Community manager | 7 |
| Consultant | 13 |
| Innovation manager | 8 |
| Knowledge/research manager | 3 |
| Product manager | 7 |
| Social media manager | 15 |
| Sales | 9 |
| Software Engineer | 7 |
| Marketing manager | 7 |
| Support | 5 |
| Other | 9 |
| TOTAL | 90 |

3.2.2 Experience with social media at work

LinkedIn, Facebook and Twitter are the most frequent social media that this sample (N=90) report to use at work, as seen in Table 48. As we can see LinkedIn, is more frequently used at work among Enterprise workers in comparison to the Journalist sample. In this particular sample LinkedIn is also regarded as more popular than both Twitter and Facebook. While Facebook are used by 52% on a daily or weekly basis, and Twitter 48%, a total of 60% are using LinkedIn on a daily or weekly basis, which is not a big surprise. LinkedIn can be a powerful tool for both enterprise workers and enterprises looking to make new connections, generate leads, and build their brand. In conclusion, LinkedIn is the most used social platform among enterprise workers in this sample.

Table 48 How often do you use these social media for work purposes? (N=90)

| | Never | Less than monthly | Monthly | Weekly | Daily | Total | Weighted Average |
|----------------------|--------------|-------------------|--------------|--------------|--------------|-------|------------------|
| Facebook | 29.21% 26 | 12.36% 11 | 5.62% 5 | 10.11% 9 | 42.70% 38 | 89 | 3.25 |
| Twitter | 28.41% 25 | 10.23% 9 | 13.64% 12 | 20.45% 18 | 27.27% 24 | 88 | 3.08 |
| Snapchat or WhatsApp | 46.59% 41 | 7.95% 7 | 3.41% 3 | 12.50% 11 | 29.55% 26 | 88 | 2.70 |
| Instagram | 51.69% 46 | 11.24% 10 | 7.87% 7 | 15.73% 14 | 13.48% 12 | 89 | 2.28 |
| LinkedIn | 13.48% 12 | 14.61% 13 | 12.36% 11 | 29.21% 26 | 30.34% 27 | 89 | 3.48 |
| Other | 44.16% 34 | 11.69% 9 | 6.49% 5 | 18.18% 14 | 19.48% 15 | 77 | 2.57 |

Concerning insights gathering in social media; 51% report that they are either moderately (29%) or extremely familiar (22%) in using social media to gain insights at work concerning brands ideas etc. Only 11% or 10 out of 90 respondents are not familiar.

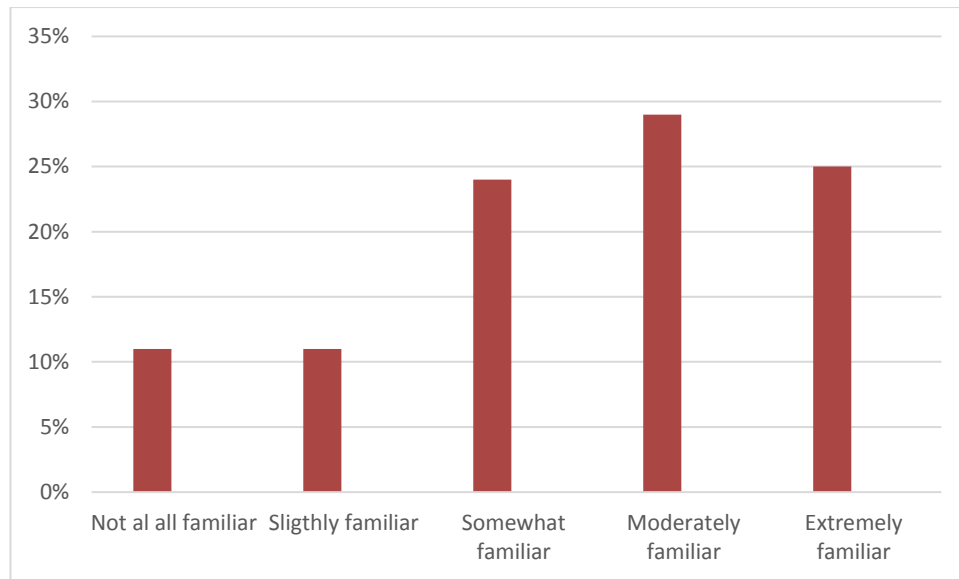


Figure 25 in % "How familiar are you with gathering insights (about a brand, ideas etc.) from social media communities?" (N =90)

We also asked about current experience with social monitoring tools, asking particular which of the following social media monitoring tools they had used the last 12 months, as shown in Table 50. Google Analytics, Facebook Insight, HootSuite, Tweetdeck and Klout are the most used tools, as seen in the table below. There were no consistent pattern in the responses concerning "other" but to mention a few: Icerocket, Notified, Tracur, Talkwalker and Meltwater.

Table 49 Social media monitoring tools used by the research sample (N = 90)

| MONITORING | N |
|------------------|----|
| Google Analytics | 57 |
| Facebook Insight | 32 |
| HootSuite | 25 |
| Tweetdeck | 21 |
| Klout | 19 |
| Social Mention | 8 |
| Topsy | 7 |
| Mention | 7 |
| Followerwonk | 5 |
| Other | 41 |

3.2.3 Results - user evaluation

The next section shows the results concerning the questionnaire survey with enterprise workers and they reported scores on the key modules or features in the REVEAL Enterprise application.

3.2.3.1 Stream monitoring

The Stream monitoring functionality was reported to be useful on a score from 5 to 7 among approximately 56% of the sample. The scores was lower on the "easy of use" and "compelling".

To monitor what's going on in social media, you can set up streams based on key words, contributors, or events. The tool can provide streams for content from different social media services such as Facebook, Twitter, and your community platform. A screenshot of our suggestion for a social media stream monitor is presented below.

The screenshot shows the REVEAL Streams interface. At the top, there's a navigation bar with 'Streams', 'New Users', and 'Role Identifier'. Below this is a 'Create New Stream' button. The main area displays four streams:

- Innovative companies:** Shows tweets from users like AprilMichelle, Chitra P Reddin, Executive Education, Aadil Abbas, The Grad School, and James Ramshotom. The tweets discuss innovation, social media, and business trends.
- Big Data:** Shows tweets from users like Muenenth2230, lina maria, Laura Raquel Mari G., Krish, Kaleb Bennett, and Youssef Malki. The tweets discuss Big Data, analytics, and business insights.
- BPM:** Shows a tweet from Frank Luyckx and an article titled 'Research studies from Forrester about the success of BPM programs...'. The article discusses the BPM framework and its benefits.
- Cloud computing:** Shows a tweet from Gabriele Strobel and an article titled 'This year's 'Summe Distributed System' experts from around graduates, young re...'. The article discusses cloud computing and its future.

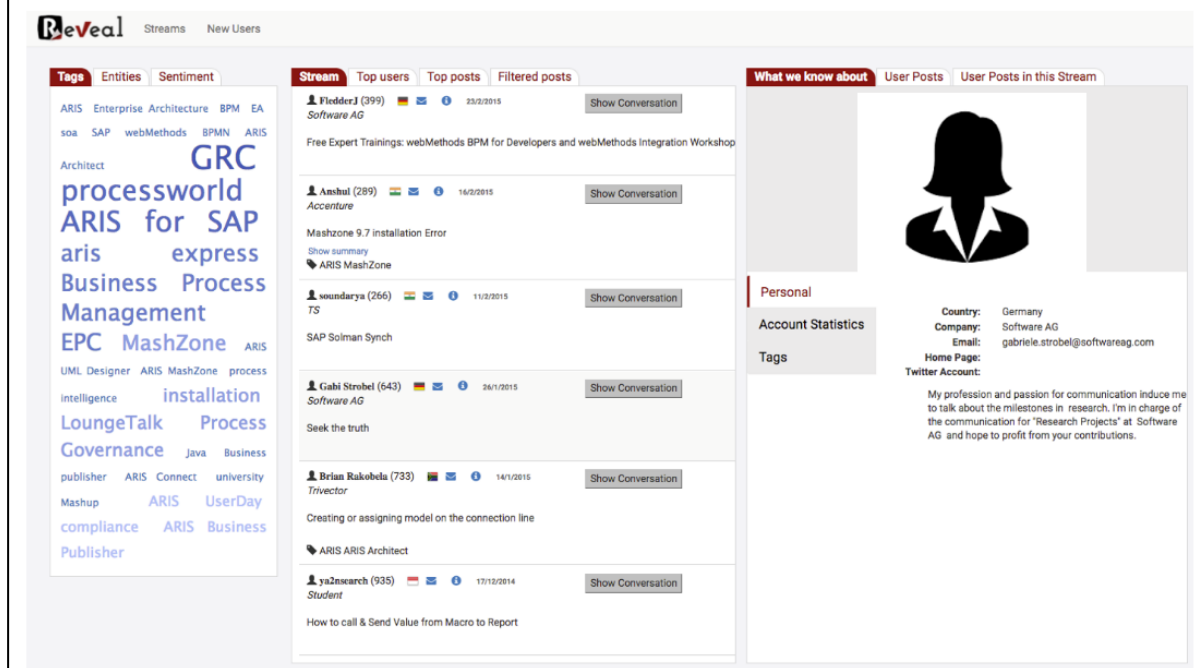
| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 (strongly agree) | Total |
|-------------|--------------------------|--------------|--------------|--------------|--------------|--------------|-----------------------|-------|
| Useful | 2.22% 2 | 4.44% 4 | 14.44% 13 | 22.22% 20 | 32.22% 29 | 20.00% 18 | 4.44% 4 | 90 |
| Easy to use | 4.49% 4 | 4.49% 4 | 13.48% 12 | 23.60% 21 | 32.58% 29 | 19.10% 17 | 2.25% 2 | 89 |
| Compelling | 7.95% 7 | 14.77% 13 | 15.91% 14 | 34.09% 30 | 18.18% 16 | 6.82% 6 | 2.27% 2 | 88 |

Figure 26 Stream monitoring and results

3.2.3.2 Stream content analysis

The next view shows the results from the Stream content analysis. Approximately 56% of the sample report a score between 5 and 7 on usefulness. The scores are slightly lower on the "easy of use" and "compelling".

To provide a better overview of conversations in your community, we suggest a *stream content analysis*: The content of each stream in the social media stream monitor may be scrutinized in detail. For each stream you can access key tags through a word cloud, sentiment analysis (classifying a given text (e.g. negative, neutral, positive), top posts, top users, and details on each contributing user. A screenshot of the suggested solution is presented below.



| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 (strongly agree) | Total |
|-------------|--------------------------|-------------|--------------|--------------|--------------|--------------|-----------------------|-------|
| Useful | 4.44% 4 | 10.00% 9 | 6.67% 6 | 22.22% 20 | 31.11% 28 | 16.67% 15 | 8.89% 8 | 90 |
| Easy to use | 1.12% 1 | 6.74% 6 | 13.48% 12 | 23.60% 21 | 34.83% 31 | 17.98% 16 | 2.25% 2 | 89 |
| Compelling | 5.62% 5 | 6.74% 6 | 21.35% 19 | 26.97% 24 | 16.85% 15 | 20.22% 18 | 2.25% 2 | 89 |

Figure 27 Stream Content and results

3.2.3.3 Top post analysis

Top posts were reported to be useful, and 54% of the sample reported a score between 5 and 7. "Easy of use" and "compelling" had lower scores than "useful".

We also suggest an easy view of *Top Posts* in your community: "Top Posts" is a particularly relevant feature, which provides immediate access to the most important content of a particular social media stream. Top Posts or content can be filtered on the basis of "number of views", "number of likes" and "number of comments". A screen shot of the Top Posts feature is provided below.

The screenshot displays the 'Reveal' application interface. On the left, there's a sidebar with various tags and categories. The main area is titled 'Top Posts' and shows a list of posts sorted by 'Number of Views'. The right sidebar provides details about the user 'Sebastian', including their profile picture, personal information, account statistics, and tags.

| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 (strongly agree) | Total |
|-------------|--------------------------|--------------|--------------|--------------|--------------|--------------|-----------------------|-------|
| Useful | 1.11% 1 | 11.11% 10 | 12.22% 11 | 21.11% 19 | 23.33% 21 | 20.00% 18 | 11.11% 10 | 90 |
| Easy to use | 2.27% 2 | 10.23% 9 | 9.09% 8 | 20.45% 18 | 31.82% 28 | 17.05% 15 | 9.09% 8 | 88 |
| Compelling | 4.49% 4 | 11.24% 10 | 16.85% 15 | 24.72% 22 | 20.22% 18 | 15.73% 14 | 6.74% 6 | 89 |

Figure 28 Top Posts and results

3.2.3.4 Top users analysis

52% of the sample gave a score between 5 and 7 on the Top users analysis. This functionality scored higher on "easy of use" and "compelling" than usefulness.

16:00:59 15.12.2016

Finally, we suggest a view to identify *Top Users*. For each stream, an overview of "Top Users" is provided. The "Top Users" of the stream can be selected based on different filters such as total posts, received likes, influence value, received comments, etc. The solutions provides you with all available details of the contributor, such as name, role, affiliation, contact information, and contributor score, to help you assess the contributors' potential impact to the community (see right-hand panel) on the specific topic the stream catches. A screenshot of the suggested solution is presented below.

| name | total | original | likes | influence | comments |
|----------------------|-------|----------|--------|-----------|----------|
| Sebastian Stein | 1218 | 150 | 485076 | 1.74 | 802 |
| Joerg Klueckmann | 156 | 72 | 215645 | 0.34 | 178 |
| DD%u00D7N0yD! | 116 | 63 | 18 | 0.34 | 152 |
| DD%u00D7N0yD-D%u00D7 | 290 | 50 | 132273 | 0.34 | 175 |
| Ivo Velitchkov | 133 | 49 | 170955 | 0.51 | 520 |
| Nina Uhl | 664 | 48 | 79410 | 0.34 | 138 |
| Rune Becker | 62 | 44 | 99228 | 0.34 | 28 |
| Elke Bastian | 125 | 39 | 108701 | 0.50 | 128 |
| adnan shahab | 49 | 37 | 100831 | 0.34 | 22 |
| Martin Kling | 68 | 35 | 92730 | 0.34 | 45 |
| JosÄ phe Blondaut | | | | | |

Personal

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I've been the ARIS Community guy, who build up this thing starting with zero members in 2009 and growing it till we passed 200k members.

Nowadays, I don't work for Software AG anymore, so please don't contact me for any statements about ARIS or other Software AG products.

You can download my PhD thesis, in which I extended ARIS to integrate business process management (BPM) and service-oriented architecture (SOA). In case you are interested, I also maintain a private blog (in German).

| | 1(strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 | Total |
|-------------|----------------------|------------|--------------|--------------|--------------|--------------|------------|-------|
| Useful | 1.11% 1 | 7.78% 7 | 18.89% 17 | 20.00% 18 | 17.78% 16 | 25.56% 23 | 8.89% 8 | 90 |
| Easy to use | 4.49% 4 | 4.49% 4 | 10.11% 9 | 23.60% 21 | 24.72% 22 | 23.60% 21 | 8.99% 8 | 89 |
| Compelling | 6.74% 6 | 8.99% 8 | 16.85% 15 | 20.22% 18 | 21.35% 19 | 20.22% 18 | 5.62% 5 | 89 |

Figure 29 Top Users and results

3.2.3.5 Overall view of the social media tools presented

There are more users that find the Enterprise application as a tool that they will potentially use at work, than there are users that will not use the these tools in their work. Over 50% give a score between 5 and 7, while only 10% give a score between 1 and 2. However, the trust in these tools receive a lower score. This latter result corresponds with the journalist application.

| | 1 (strongly disagree) | 2 | 3 | 4 | 5 | 6 | 7 (strongly agree) | Total |
|---|--------------------------|------------|--------------|--------------|--------------|--------------|-----------------------|-------|
| I would use these in my work | 3.33% 3 | 7.78% 7 | 12.22% 11 | 24.44% 22 | 21.11% 19 | 15.56% 14 | 15.56% 14 | 90 |
| I would trust that they monitor and highlight what I need for my work | 3.33% 3 | 7.78% 7 | 14.44% 13 | 23.33% 21 | 28.89% 26 | 16.67% 15 | 5.56% 5 | 90 |

Our open question explained why some of the users in this sample reported their specific evaluation of REVEAL. One of reasons was the ease of use and compelling issue:

- *To be honest, this will need a lot of optimization to be more compelling and more user friendly. You need to make it more clear, what you want the user to focus on (**Knowledge manager, Denmark, 18-24 years, Male**).*

Some other users provided their reasons for their positive evaluation of REVEAL:

- *Would more than likely use them and find them to be useful for the job. They presented data in a concise manner, although they are kind of difficult to discern what was happening at a glance. (**Technical support, USA, 25-34 years, Male**)*
- *The stream concept is intuitive to the users. The user interface provided by REVEAL is well-thought of, especially, the tag cloud, top users, top posts - simply because, users would be interested in these aspects in social media, at the end of the day, as to what is most interesting thing happening in social media, in a particular stream (**Software Engineer, India, 25-35 years, Male**).*

3.2.3.6 Trust issues

Regarding the trust issues, they reported a need to understand how the ranking was achieved and trust in the system use of sources:

- *I order to trust you need to understand the way the ranking is achieved - the algo behind it. If that is clear trust can be gained. All will depend in the end on the Natural Language intelligence behind it to really make it work. (**Innovation manager, Netherlands, 45-54 years, Male**).*
- *If I need to know the what kind of influencer's characteristics are leading to higher likes or retweets, how can that be achieved? (**Product manager, Germany, 25-34 years, Male**).*

- *As long as I trust the sources then I will have faith the software can collate relevant content for me as I understand how easy it is to profile based on consumer needs through technology today (**Innovation manager, Great Britain, 25-34 years, Male**).*

Others was more concerned about trust issues related to the data quality in social media, the way people write and split words:

- *It can be difficult to be trust, because of the way people are writing and splitting words in social media. (**Community manager, Norway, 25-34 years, Female**).*

3.2.3.7 Specific user need and suggestions

There were some user needs that came up during this evaluation. One user would like to filter based on locations:

- *Not sure whether you are providing geographical filters also for Top Users & Top posts. We need to also measure our top post/user impact geography wise. (**UX-designer, 25-34 years, India, Male**)*

The same users reported also a need for tools to export results in to a PDF-file or similar:

- *Can the outcome of your tool/software be exported to a PDF file for presenting to people who do not have access or cannot be given access to the tool? (**UX-designer, 25-34 years, India, Male**)*

A Norwegian innovation manager was asking for a more customized solution:

- *Is there a way to put alerts for a custom hashtags/stories? (**Innovation manager, Norway, 25-34 years, Female**)*

Interestingly some also asked for more AI.

- *For specific questions those tools based on statistics only do not deliver relevant content. The user should be able to tell the tool his intention and the background of his question. The tool then should filter out relevant answers only. Therefore, you have to implement some AI and world knowledge into the system. (**Consultant, Switzerland, 45-54 years, Male**)*

3.3 Conclusion formative evaluation – Enterprise application

The key findings for the evaluation of the enterprise application are summed up in the following:

USEFULNESS

- **SOCIAL MEDIA:** Various social media should be supported, including LinkedIn and Facebook.
- **INTERNAL VS. EXTERNAL:** Separating internal and external communication within the enterprise app, to help users to identify which persons that are communicating. Users want to filter between contributing users from their own enterprise versus others.
- **AUTOMATIC:** Automatic data gathering is fine (e.g. in contrast to journalists' scenario)
- **SCENARIOS:** The newbie scenario was not relevant for product manager and community managers in this sample.

USABILITY

- **VISIBILITY:** The key functionality (e.g. finding influencers/not the streams) must be more visible to help users to navigate.
- **INTUITIVE:** Make the interface simpler and more usable to find different tasks that are supported by the different scenarios.
- **CLARITY:** Clearer labelling of concepts (e.g. contributors => influencers) so the users understand more intuitively what tasks the enterprise app supports.
- **TARGET GROUPS:** Key user groups/enterprises should be addressed more clearly (e.g. customer support vs. innovation). At present, it is not clear whether the app supports innovation activities in general or whether it is more focused on customer support activities. If both, we suggest that these activities are clearly separated in the design solution. Clear, defined tasks will help the different user groups to understand the workflow.

USER EXPERIENCE

- **ATTRACTIVENESS:** More nudging or motivating buttons and interface in general. They find the interface a bit boring and grey and want the user interface to be more pleasant to increase the general user experience.

The questionnaire evaluation (N= 90) are summarized in the Figure below, where the average scores on all the three main modules in the Enterprise application is presented, including the overall perception of the REVEAL-Enterprise applications and how they trust the application are summed up.

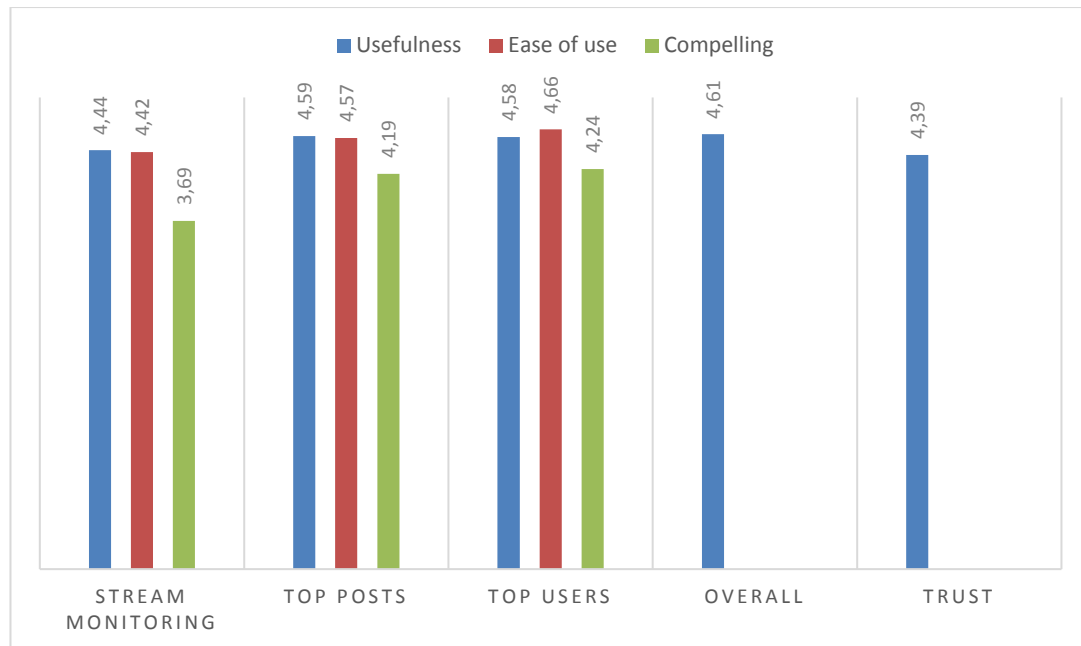


Figure 30 Overview over the average scores on the Enterprise application (N=90)
(1 = lowest score, 7 = highest score)

We find that the major features in the Enterprise application score relatively similar on all measures (lowest 1 and highest 7). The stream monitoring functionality are the least popular feature. In more detail, we find that the enterprise workers in this evaluation are more satisfied with the usefulness and "ease of use" of the features rather than how "compelling" they find it. Hence, the survey indicates that, user experience (compelling visual interface) is an issue to consider to make it market ready.

Overall, the majority of the sample report to be satisfied with the Enterprise application, but slightly lower when compared with how journalists' experiences the Journalists application. The enterprise workers herein score 4,6 (quite strongly agree) that if they "had access to verification tools and services similar to those presented in this survey" they would use it.

To sum up: The main feedback from the survey is that most Enterprise workers perceive the tools in REVEAL useful and many report a need for tools similar to REVEAL in their work.

4 Summative evaluations of the REVEAL-applications

The summative evaluations are evaluations intended to assess the efficacy of the final design.¹⁶ Moreover, the summative evaluations assess how well the REVEAL framework and applications meets user-needs, requirements and preferred experiences, and to what extent, the framework and applications impacts the two target domains (journalism domain / enterprise domain). The findings from the summative evaluations herein, will serve as the projects own assessment of the extent to which the final applications could help end-users reveal the hidden modalities of social media content, as well as the overall usability and user experience of the REVEAL framework and applications.

4.1 Method

We used the same method – a survey questionnaire approach - for both the Journalist application and the Enterprise application. We followed, therefore, the Online Living Lab approach described in the formative evaluation phase to gather feedback from as many representative users as possible in the final evaluation phase of the project. Hence, the solutions developed in REVEAL are made available through an online content platform where users are invited to review and look into designs and solutions, explained by description and visualized by screenshots.

The summative evaluations are done on the final versions (per 1st of December 2016) of the News application and the Enterprise application. The main changes concerning the applications from the last evaluation cycle in June and September are:

News application:

Stream monitoring: Multimedia content (such as images) is visible within the streams.

Stream analysis: Two new functionalities have been integrated. The interactive map view displays geospatial clusters at different levels of granularity. The interactive timeline view displays a Gantt style view showing sampled sets of posts over a time window.

Verification board: The similar posts functionality has been added which can bring similar posts related to the item selected for verification. Also under user information, the role analysis functionality assigns a social role to the selected user, based on different features extracted from the social network of the user.

Enterprise application:

Stream monitoring: Users can set up streams from Twitter, and not only from ARIS community.

Stream analysis: Under the user details information, which is visible when a specific user is selected, two more functionalities have been added. Trustworthiness and Role which assign a value

¹⁶ Hartson, H. R., Andre, T. S., & Williges, R. C. (2001). Criteria for evaluating usability evaluation methods. *International journal of human-computer interaction*, 13(4), 373-410.

of trustworthiness and a social role to the selected user respectively. These are calculated automatically by the related analysis modules, based on different features extracted from the social network of the user.

To address the target groups in REVEAL we asked Survata, an independent research firm in San Francisco, US, to recruit our sample. We interviewed a total of 240 respondents;

- 120 online respondents from the US for the Journalist application¹⁷, 57 were females and 63 males. The Figure below describe their journalistic work. Most of the journalists in this sample covered local news and politics. 22,5% worked with international news.

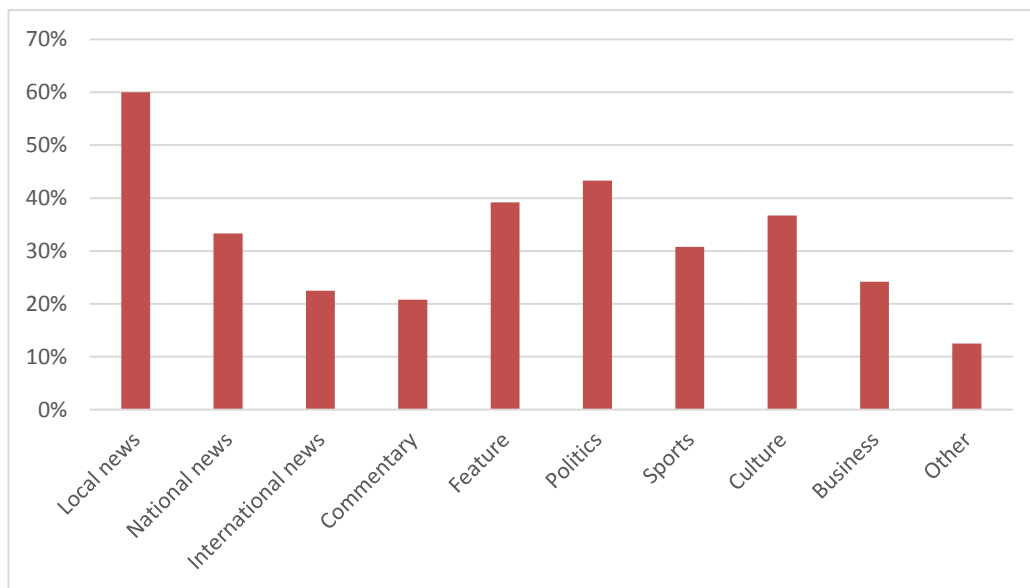


Figure 31 What kind of journalistic stories the sample (N=120) primarily cover in %

- 120 online respondents from the US for the Enterprise application, 33 were females and 87 males. 90% worked in the area of information and communications technology, while the rest worked with marketing. 32% worked as product managers, 21% as consultants, 14% as knowledge managers, 18% as innovation managers, and 10% as community or social media managers. 71% worked with social media on a daily (52%) or weekly basis (19%).

¹⁷ This journalist survey are conducted in an interesting time window - just after the US-presidential election. Many Americans believe fake news is sowing confusion, and that 23% say they have shared a made-up news story – either knowingly or not. These results come from a Pew Internet Research survey of 1,002 US adults conducted from Dec. 1 to 4, 2016. <http://www.journalism.org/2016/12/15/many-americans-believe-fake-news-is-sowing-confusion/>

Both the online surveys were conducted mid of December 2016. Survata reaches respondents on publisher sites around the web in US. Survata collect their samples for research by doing partnerships with publishers to let their visitors take a Survata survey, and to unlock the publisher's premium content (e.g., premium articles, ebooks, videos, etc.).

The two samples in this evaluation are selected based on initial screening questions. For example, only people reported to be journalists could access the Journalist survey, while only community managers, product managers, consultants, innovation managers or similar could access the Enterprise survey. Results of a subpopulation should reflect the expected results from surveying an entire population. The components of accurate results are ensuring respondents answer honestly (the "veracity" of the answers), ensuring to reach a representative sample of a subpopulation (the "bias" of a sample), and ensuring to reach an adequate number of respondents to be statistically significant (the "margin of error" of the results).

To avoid false survey responses, Survata use technology to detect when respondents are not answering honestly, tacking a respondent's response time, response pattern, and other metadata to determine which responses should be discarded from the survey. For further information, visit www.survata.com.

The questionnaire was developed in the same way as in the questionnaire approach done in the formative evaluation; however, the journalist survey was a bit more extensive to cover a broader range of the modules within in the application.

We focused on the same three key constructs in all the previous described user evaluations of the REVEAL prototype:

- **Usefulness** concerns whether the REVEAL framework and applications are perceived by users to increase their job performance, given that the framework and applications have satisfactory usability. In short, usefulness concerns whether the REVEAL framework and applications are perceived as needed by their users.
- **Usability** concerns whether users are able to use the REVEAL framework and applications to achieve specified goals in an effective and efficient manner.
- **User experience** concerns the users' subjective experiences with the REVEAL framework and applications. In particular, we see it as important to address the users' perceptions of trust, but also how "compelling" or attractive they find the design of the application.

4.2 Results Journalists application

First, we will present some background information about their social media usage at work and what kind of knowledge the sample report concerning their use and familiarity about verification and fact-checking services. Second, we will report the evaluation part, describing the sample journalists' experiences of the different modules.

4.2.1 Social media at work and experience with verification tools

The figure below shows how the journalists sample report how often they use different social media at work. Facebook and Twitter are most frequently used with over 50% reporting it to be used on a daily basis. In comparison to the sample in the formative evaluation, this sample report a much higher use of social media. For example, while 53% in the first sample (N=82) used Facebook on daily and weekly basis, over 80% in the current sample (N=120) report the same.

Interestingly, Snapchat and WhatsApp is gaining tremendous popularity for researching stories among journalists. In this sample, Snapchat is used by 25% on a daily basis, while WhatsApp is used by over 15%. This might indicate that journalist using these apps reach out to a younger population and the content and information that interest this age segment. However, the challenge concerning verification tools are that these messaging platforms represent less transparent social media environments in comparison to Facebook and Twitter.

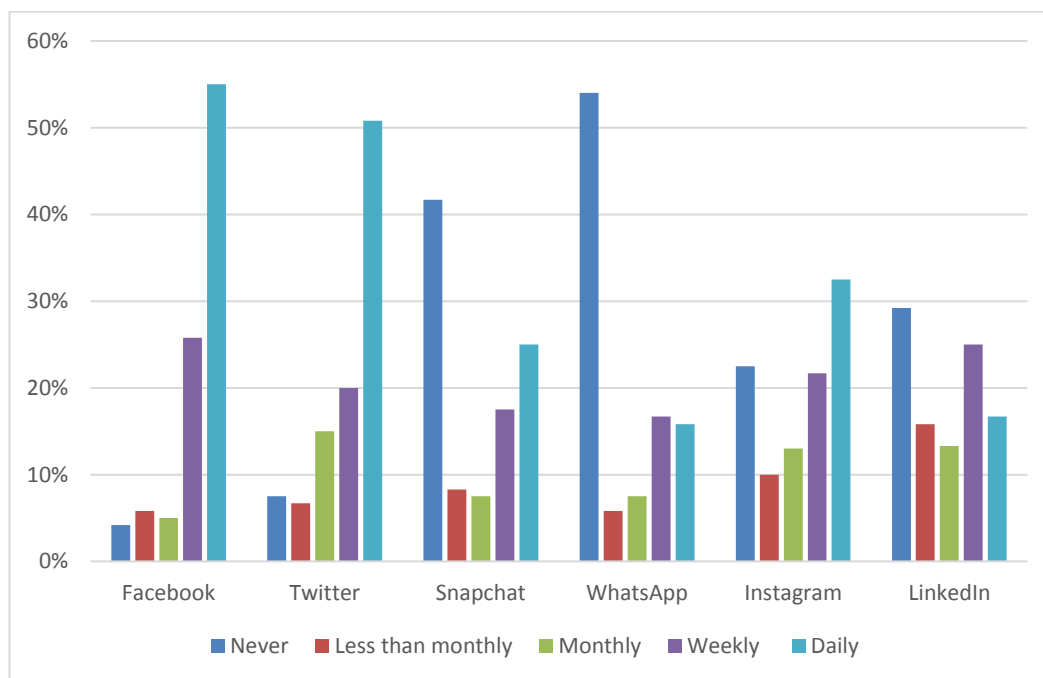


Figure 32 Social media use when researching a story in % (N=120)

As illustrated in the Figure 33 below our "summative sample" are more experienced and familiar with the use of verification of sources in social media. 44% reported to be "very familiar", in comparison only 26% of the sample in the formative evaluation reported to be "very familiar".

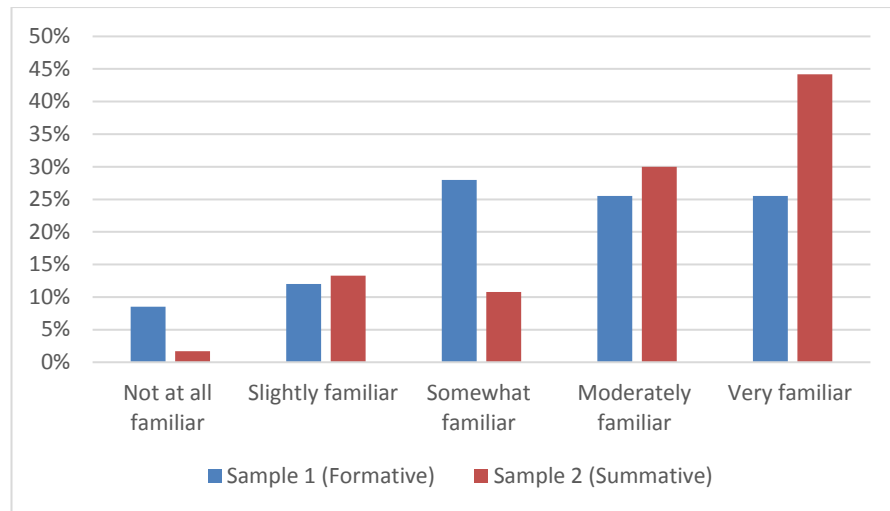


Figure 33 "How familiar are you with verification of content and sources in social media?" A comparison between Sample 1 (N=88) and Sample 2 (N=120) in %.

The summative questionnaire sample recruited in December report also to have used more of the various fact-checking services that currently are available compared to the journalists in the formative sample in June. This might due to the fact that the summative evaluation used a US sample only, where US-based fact-checking services such as Snopes, Politifact and Factcheck.org are more relevant. American journalists, thus, have more experience with US-based fact-checking services.

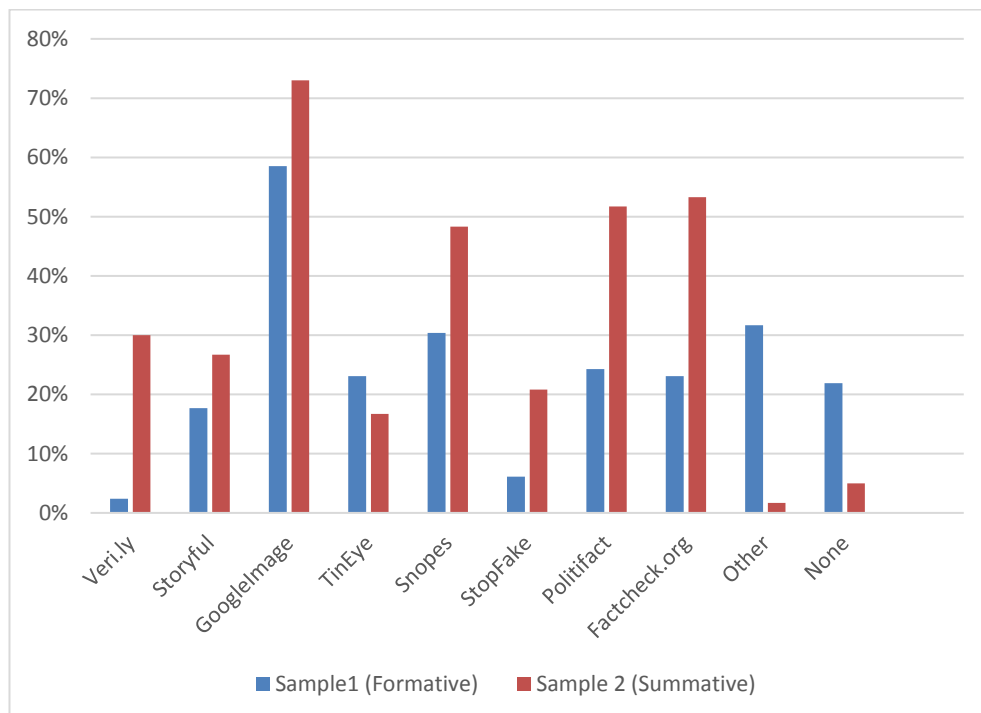


Figure 34 "In the past 12 months, which of the following verification and fact-checking tools and services have you used" in %. Comparing Sample 1 (N=88) and Sample 2 (N=120)

Interestingly, 35% of the sample finds the current verification and fact-checking services very useful (see Figure 35 below)¹⁸. This indicate the needs many journalists experience in their work concerning access to verification and fact-checking tools.

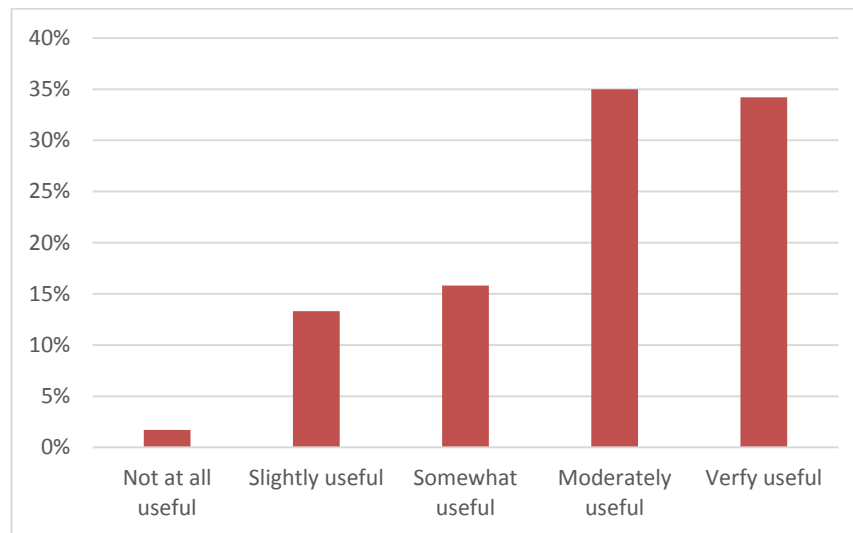


Figure 35 How useful they find current verification and fact-checking services in % (N=120)

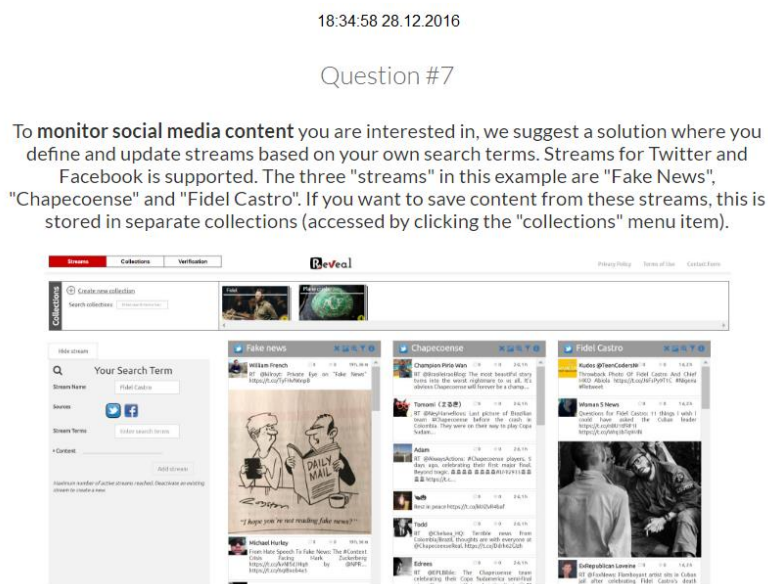
¹⁸ The general usefulness concerning tools for fact-check and verification was not measured in the online questionnaire in June.

4.2.2 Results of summative evaluation - Journalists application

We investigated in total 11 central features or modules in the Journalists application that were selected based on experiences from the formative evaluations and based on recommendations from ATC and DW. This were in total six more features than in the questionnaire survey in the formative evaluation. This was done to cover a broader spectre of the Journalist application.

4.2.2.1 Social media monitoring

Figure 36 shows that more than 18% of this sample "strongly agree" (7) with the usefulness of social monitoring feature. The ratings are quite similar across the three measures, still the monitoring feature is perceived less useful than the typical verification features.



Overall, this functionality for social media monitoring looks ...

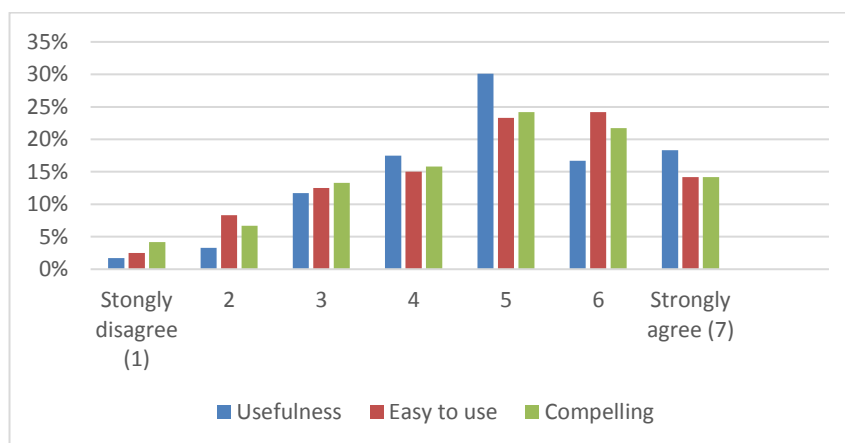


Figure 36 Results - Social Media Monitoring in % (N=120)

4.2.2.2 Filter content

The sample of journalists perceived the Filter content feature to be both more useful and easy to use than the monitoring feature.

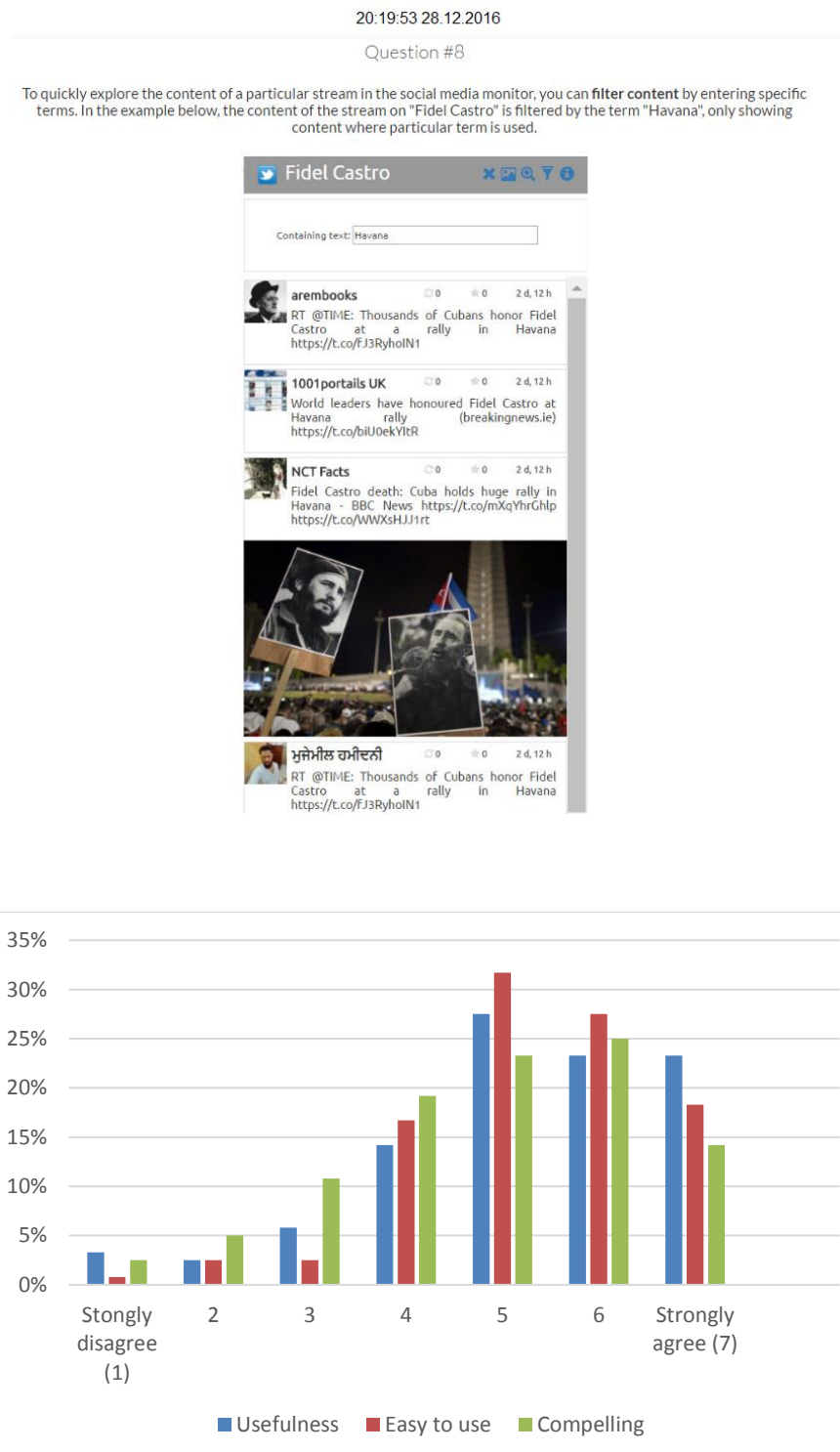


Figure 37 Results Filter content in % (N=120)

4.2.2.3 Top users

The journalist sample perceived the usefulness of the Top user feature to be high. Easy to use was also perceived to be good.

20:29:53 28.12.2016

To analyze social media content from your streams, we suggest features for analyzing different aspects of a stream: One of these is **Top Users**.

The image below show Top Users for the example stream, available by clicking the magnifier icon. For this example, the Top Users are TheRealDonaldTrump and FoxNews, meaning that these are the most influential users for this topic in terms of engagement for their posts.



Overall, this Top Users feature looks...

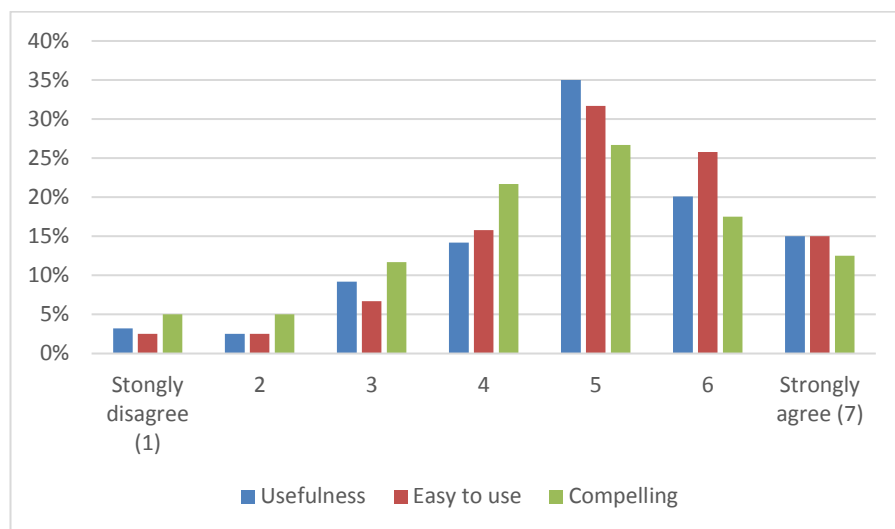


Figure 38 Results Top users in % (N=120)

4.2.2.4 Active Communities

The results were more mixed for the Active Communities feature compared to the results related to Top users and Filter content. This was also regarded as more compelling than easy to use.

21:03:32 28.12.2016

Question #10

Another feature suggested for analyzing social media content from your streams is that of **Active Communities**.

The image below shows Active Communities for the example stream. In the right-hand section, the bubbles indicate the activity of different communities on a timeline. You can explore these communities to see how they are connected (on the left), and what they are communicating about.



Overall, this Active Communities feature looks...

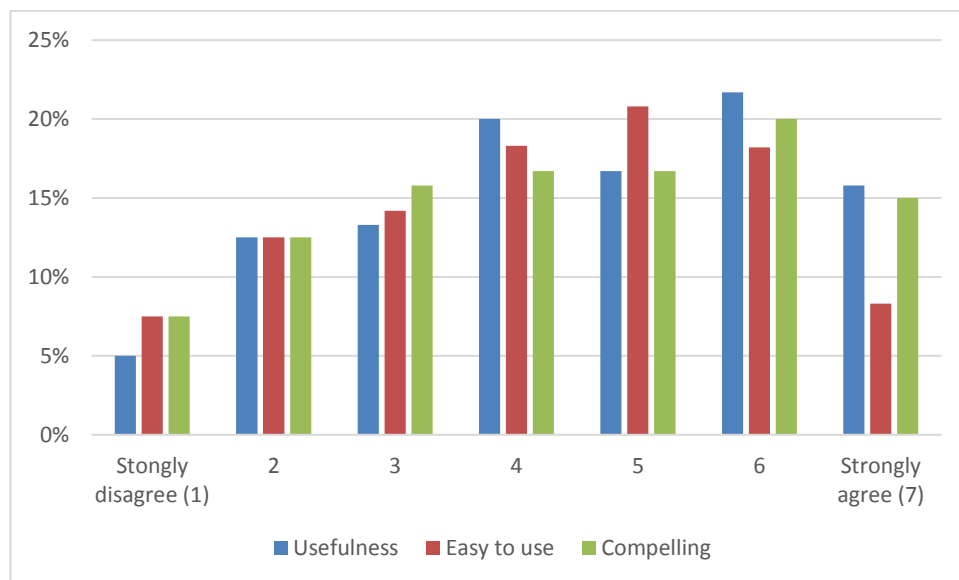


Figure 39 Results Active Communities in % (N=120)

4.2.2.5 The Influence feature

The influence feature received, similar to Active Communities, more mixed responses by the sample in this summative evaluation. However, most of the users in this sample finds the feature useful. Interestingly, more people find it compelling.

21:22:16 28.12.2016

To get a quick overview of the users that are influencers for a particular stream, and the relations between these, you can use the **Influence** feature - shown in the example visualization below. The example is for the influencers in the "Fidel Castro" stream.

Each circle represents a user, its radius proportional to its influence and its color according to their main topic of interest. You can use this to identify influential users, the interactions between them or filter them with regard to the topic of interest.



Overall, this Influence feature looks...

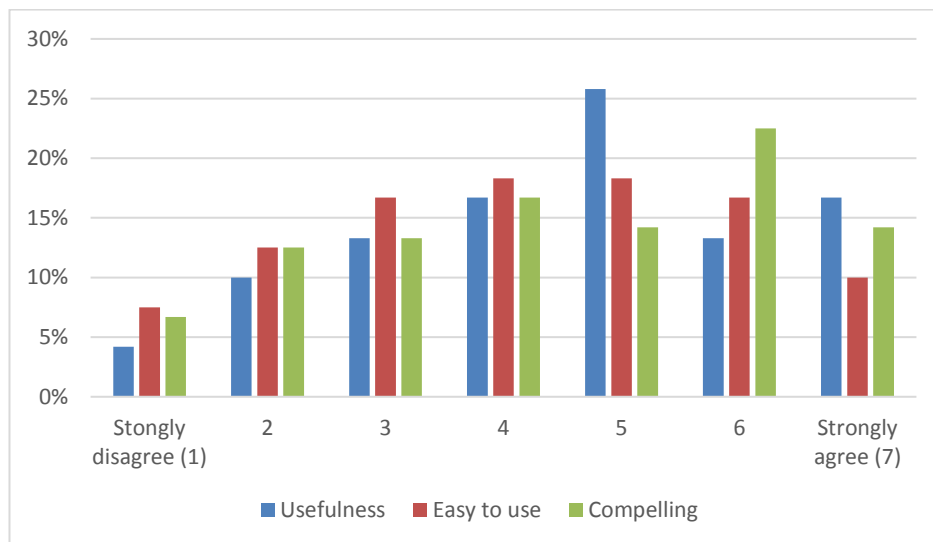


Figure 40 Results Influence feature in % (N=120)

4.2.2.6 Community prediction

The results for the community prediction tool is reported to be useful by the majority of the journalists in this sample, but not so useful as the sentiment analysis feature and the verification board below.

16:31:03 29.12.2016

To get an overview of relevant communities associated with a content stream, the feature **Community Predictions** provides a listing of communities associated with the topic, their topic of interest and members, and their likely development (growing, continuing, dissolving).

The example below shows communities related to the Fidel Castro" stream.



Overall, this Community Prediction feature looks...

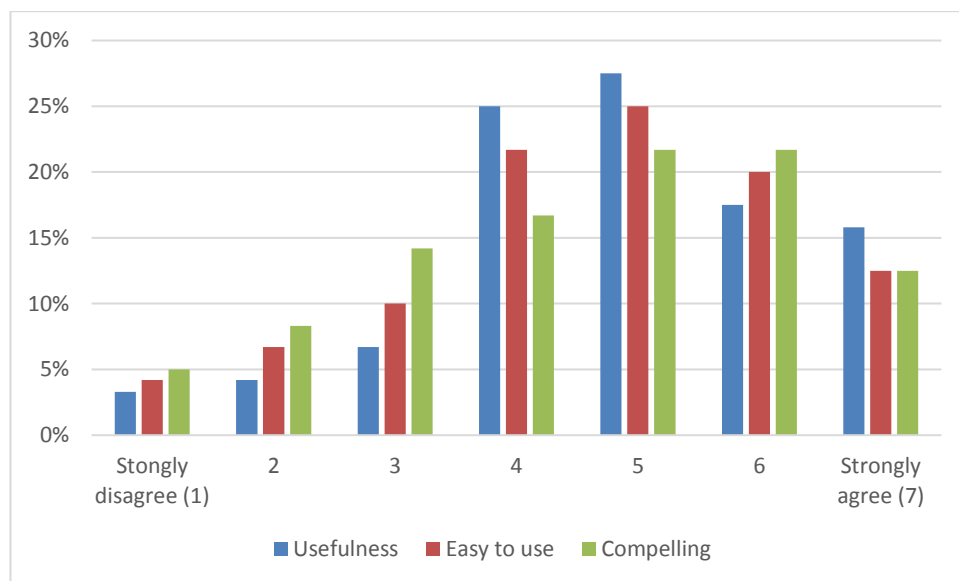


Figure 41 Results community prediction in % (N= 120)

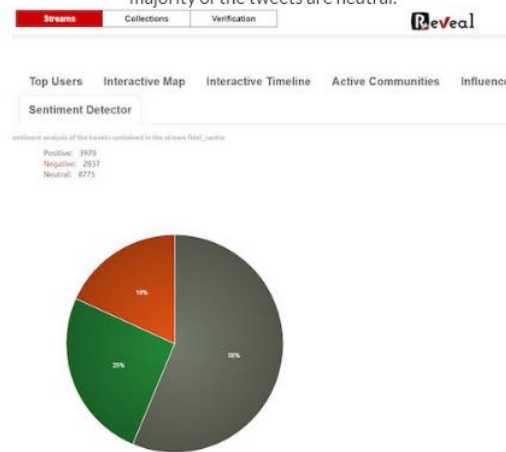
4.2.2.7 Sentiment analysis

Sentiment analysis was regarded as one of the more useful tools in this summative evaluation.

17:14:43 29.12.2016

This solution, provide you with a feature for **Sentiment analysis** on the all the tweets for a given stream.

Below, an example analysis overview is provided. Positive, negative, and neutral tweets are color coded. In this example, the majority of the tweets are neutral.



Overall, this Sentiment Analysis feature looks...

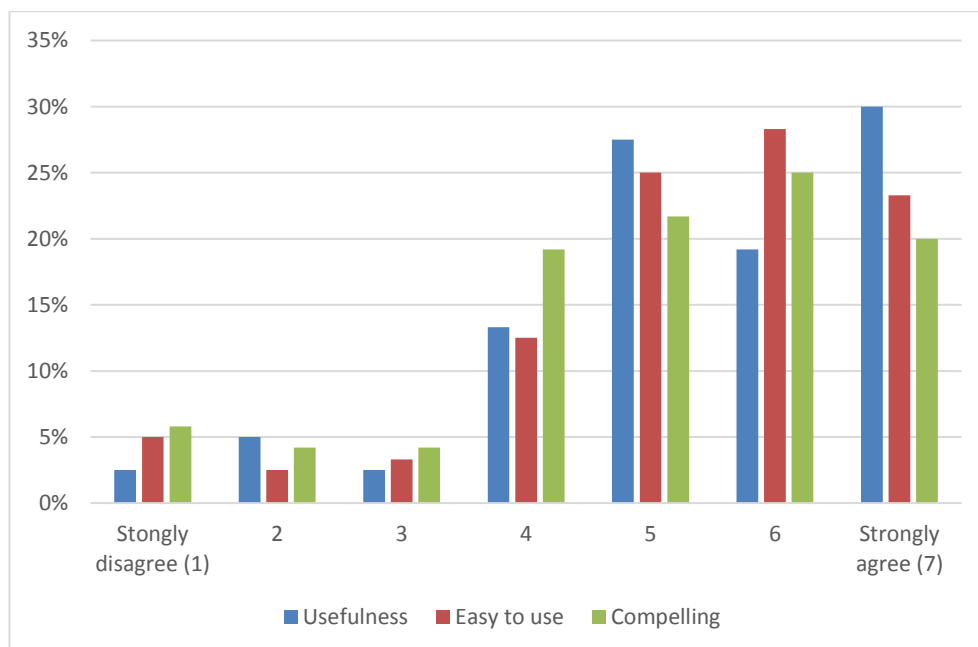


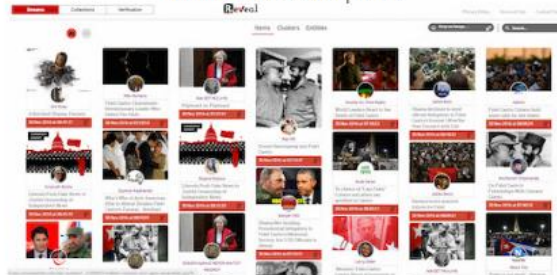
Figure 42 Results sentiment analysis

4.2.2.8 Multimedia browsing

Multimedia browsing were perceived useful among the journalists in this sample. Journalists are increasingly working with multimedia, and may as such explain the relatively high score concerning usefulness.

17:23:31 29.12.2016

Multimedia content is becoming increasingly important. To scrutinize the multimedia content of a particular stream, we suggest the **Multimedia Browsing** feature where you can browse the multimedia content of a particular stream. You can also filter on videos and photo.



As part of your Multimedia Browsing, you can also cluster content from a particular user, as seen below.



Overall, this Multimedia Browsing feature looks...

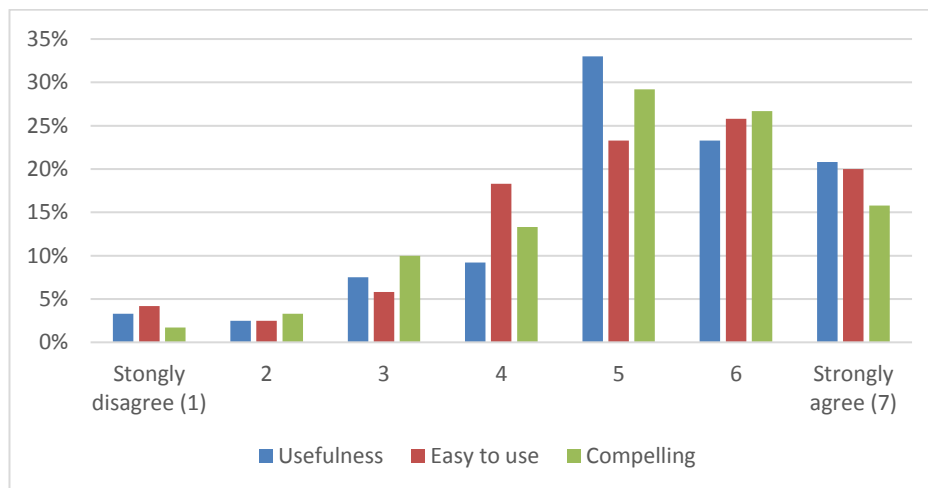


Figure 43 Results Multimedia browsing in % (N=120)

4.2.2.9 Multimedia filtering

The Multimedia filtering feature scored higher on usefulness than easy of use and compelling. However, the average score indicates that most users in this sample was positive towards such a functionality allowing for multimedia filtering.

17:34:18 29.12.2016

To allow for an in-depth analysis of multimedia content in your stream, you can use the **Multimedia Filtering** features to sort the content based on different criteria, such as the "location", "person" or "organisation" related to a particular topic in your stream, as shown below.



You can also cluster content based on the frequency of postings, as seen below. You can access content directly from the clusters.



Overall, this way of filtering and analyzing multimedia content in my stream looks...

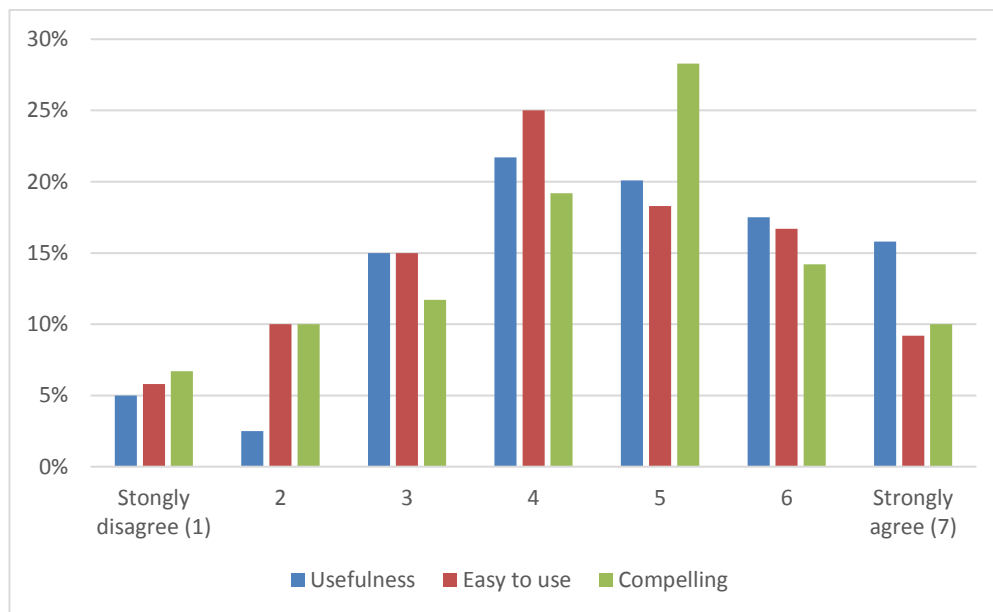


Figure 44 Results Multimedia filtering in % (N=120)

4.2.2.10 Verification board

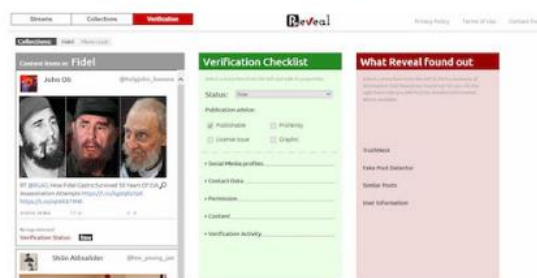
The results concerning the verification board is very positive. Most users in this sample valued this feature. A total of 28% strongly agree that this tool is useful. Very few disagree with the usefulness.

17:42:32 29.12.2016

At the heart of the REVEAL solution, are the features for verifying social media content. For this purpose, the solution employs a set of algorithms for content verification. These are briefly visualized below.

- (1) On the left, you can choose the content items you want to verify, (2) in the green column there is a "Verification checklist", (3) and the red column presents the verification results.

You can choose different options: "TruthNest" (verification information at individual tweet level), "Fake post detector" (an estimate of the veracity of the tweets), "Similar post" (shows similar posts related to an item), and "User information" (basic information about the user posting the item).



Overall, this verification board looks...

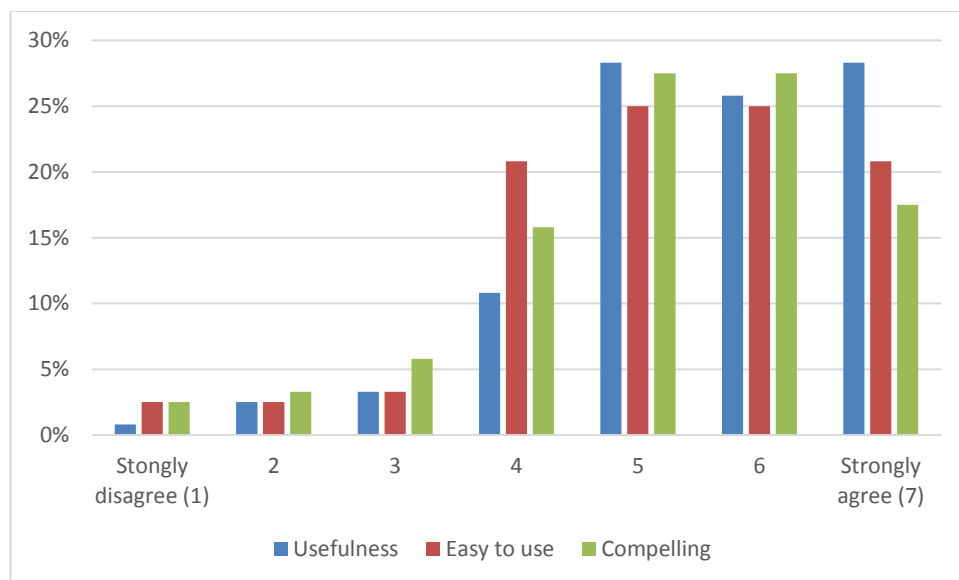


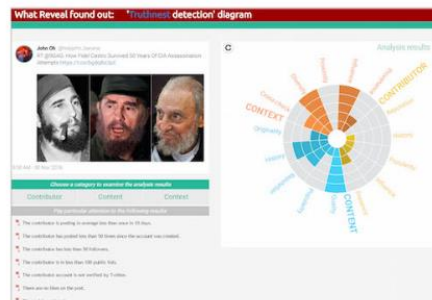
Figure 45 Results Verification board in % (N=120)

4.2.2.11 ThruthNest

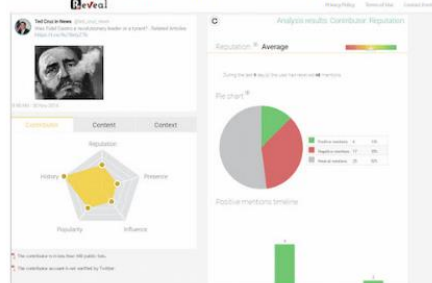
ThruthNest received positive feedback, overall, from the majority of the journalist sample herein. Yet, the feedback was less positive than how they perceived the Verification board.

17:51:17 29.12.2016

When we use the red "Verification" column from our last view, the results from **TruthNest** is presented. The results concern the veracity of a given piece of content, and is structure according to contributor" (data relevant to assess the source of the content), "content" (information providing cues to the credibility of the content) and "context" (the contextual relations of the content).



This is an example of the post concerning and evaluation of the "contributor" of this post (source verification).



Overall, this TruthNest verification feature looks...

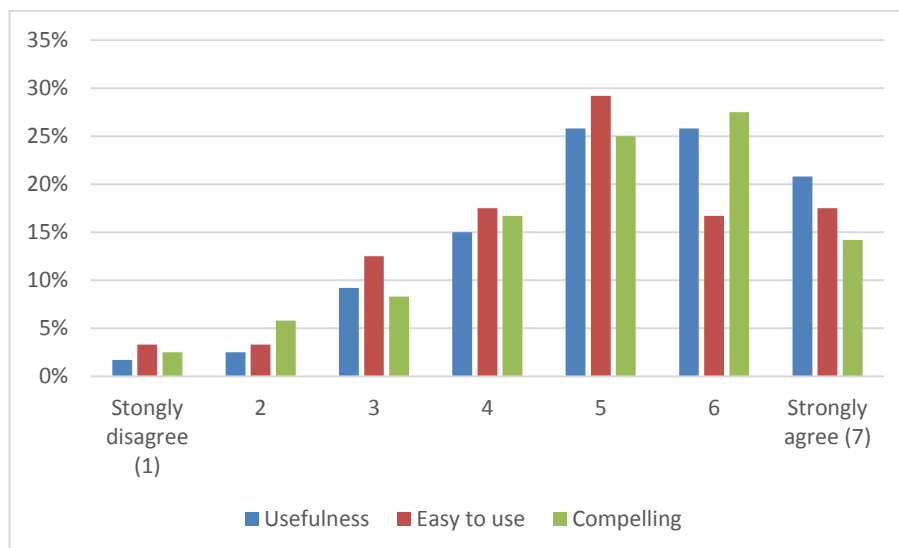


Figure 46 Results ThruthNest in % (N=120)

4.2.2.12 Fake Post Detector

The Fake Post Detector verification feature received strong evaluation results.

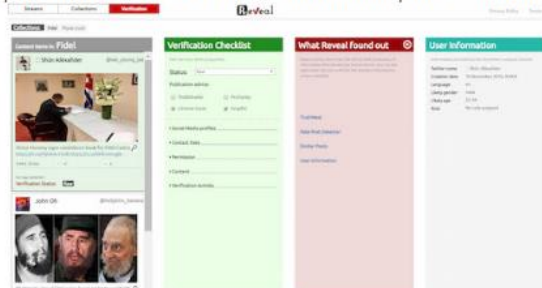
17:59:54 29.12.2016

This view shows a **Fake Post Detector**. This is a verification feature assessing the degree of truth for a particular post, based on underlying algorithms.

See example below evaluating the post from "Shūn Alèxañder" (see left) and results (see right).



In this example you can also see the user information from the post of "Shūn Alèxañder" (see left)



Overall, this Fake Post Detector looks...

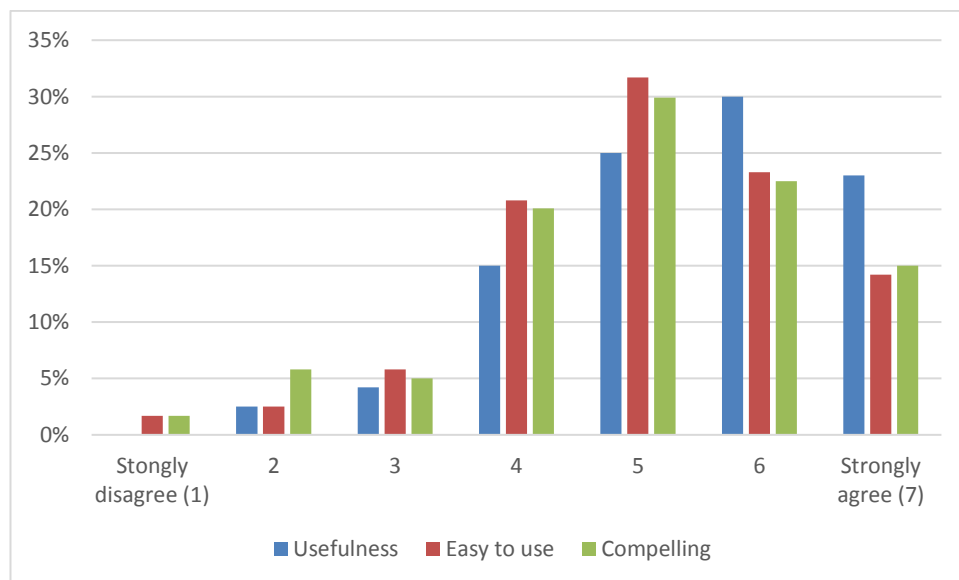


Figure 47 Results Fake Post Detector in % (N=120)

4.2.3 Intention to use and trust - Journalist application

This section cover intention to use and trust in the journalist application, comparing Sample 1 and Sample 2 to detect any differences in the experience of the REVEAL-application in June 2016 versus December 2016.

4.2.3.1 Intention to use REVEAL – comparing sample 1 and 2

In the end of the survey, and after the presentation of all the features to the sample, we measured journalists' intentions to use REVEAL. We did this by asking the respondents if they agreed or not to the following statement: "Overall, if you had access to social media verification tools and services similar to those presented in this survey I would use these in my work". The exact similar statement was also presented for sample 1 in the Formative evaluation, we were therefore able to compare the two results, using sample 1 as a baseline. Figure 48. below illustrate that journalists in sample 2, in the summative evaluation, slightly reported a higher level of intention to use than sample 1. Over 65% of the participants in sample 1 are responding between 5 and 7 (strongly agree), while 77,5% of the participants in sample 2 are responding between 5 and 7 (strongly agree),

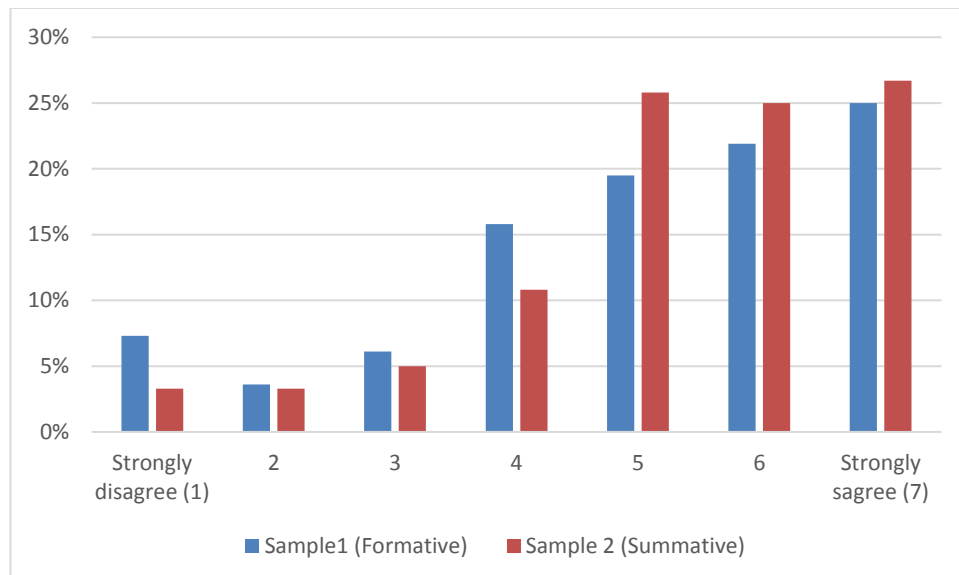


Figure 48 Results intentions to use REVEAL in % – comparing sample 1 (N=82) and sample 2 (N=120)

4.2.3.2 Trust in automatic verification tools – comparing sample 1 and sample 2

Such as in the formative evaluation we also asked if they trusted such tools in the summative evaluation. The reported trust level in such tools were in the formative evaluation (sample 1) found to be mixed, were more journalists report distrust than trust. This was not clear in the same way in the summative evaluation.

In the Figure below we see that the trust level are higher in the summative evaluation than the formative evaluation. 23% in sample 1 reported between 5-7 (strongly agree) that they would trust such automatic applications in their work, while 60% reported so in sample 2.

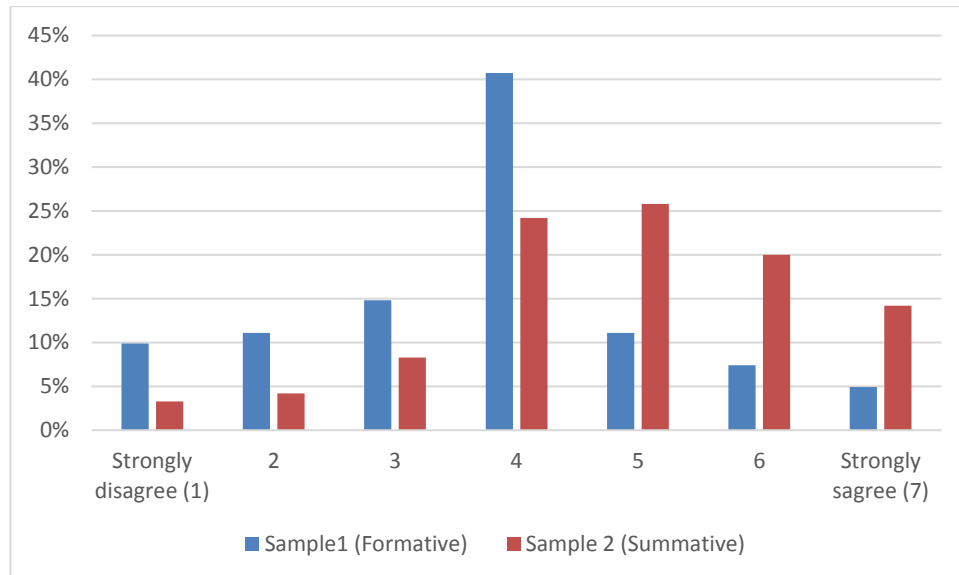


Figure 49 Results trust in automatic verification tools in % – comparing sample 1 (N=82) and sample 2 (N=120)

The reason for this increase in trust might be due differences in sample characteristics, that more journalists in sample 2 are social media savvy and more used to various verification tools. Another explanation could also be that the new design are more convincing in the way these tools are working and more transparent in how they work. We also presented more modules to the sample in the summative evaluation. One of the journalists responding to the open question also says that he feel convinced by all the different ways REVEAL are verifying:

They (the REVEAL tools) seem to be covering a lot of bases, and checking against many outside influencers. i like that there are different things that go into the checking (US news journalist, female, 25-34 years)

Three other journalists in this sample are explaining and confirming the trust issues from the formative evaluation, but also highlighting the usefulness of these tools:

These tools seem very useful -- I find the graphs and interest bubbles most compelling. However, I would like to know how some of these tools decide what is or is not fake. I also find the ability to search by term very helpful. (US news journalist, female, 18-24 years).

I just don't feel like data from an automated source or internet should be verified that way. Best to talk to a person if possible. (US news journalist, female, 35-44 years)

Any tool that can help verify information quickly is useful. But I probably wouldn't rely solely on it until I can see that it has a solid track record of accuracy. I would consider adding it to the tools I use in my work and go from there (US news journalist, female, 35-44 years).

Hence, this also confirms why the trust level is in general lower than the intention to use level, as measured in Figure 48.

4.2.4 Conclusion summative evaluation – Journalist application

This section sums up the most important results. The majority of journalists in the summative evaluation shows great interest in REVEAL, as seen in the evaluation results above. The journalist in this sample finds in addition great interest to use similar verification tools as REVEAL in their journalistic work.

The evaluation also shows that specific verification tools (e.g. verification board) are experienced to be more useful than monitoring and filtering tools. The trust level of automatic verification tools is still an issue, and trust in such tools is in average lower than the results from the intention to use similar tools at work. Nevertheless, the perceived trust level was found to be higher in the summative evaluation than in the formative evaluation.

Overall, the findings from the questionnaire survey in June 2016 is confirmed by the results from the summative evaluation. The assumption based on these results is that we see a high compliance between the user needs for verification tools among journalists using in social media at work and what REVEAL verification tools offer to journalists. The usefulness of the REVEAL application is perceived to be high, so is also intention to use such tools at work. This was also observed by the open ended question.

Yet, an interesting observation concerning trends in social media usage patterns among journalists is the increasing importance and use of Snapchat and WhatsApp for researching stories. These social media are not covered by REVEAL, and is in general difficult to aim for. These messaging platforms represent less transparent social media environments in comparison to Facebook and Twitter, which might be a future challenge.

4.3 Results of Enterprise application

First, we will present some background information about their social media usage at work and what kind of knowledge the sample report concerning their use and familiarity about verification and user insight services. Second, we will report the evaluation part, describing enterprise workers' experiences of the different modules evaluated in this report.

4.3.1 Social media at work and experience with social media insights tools

The first question covered the different social media Enterprise workers applied at work. We see in Figure 51 below that Facebook, Instagram and WhatsApp are the most used on a daily basis. The heavy use of WhatsApp, is similar to the user trend we see among journalist, and seems to indicate that this kind of activity are entering more private and hidden communications arenas, that might be less open for analytical tools such as REVEAL in the future.

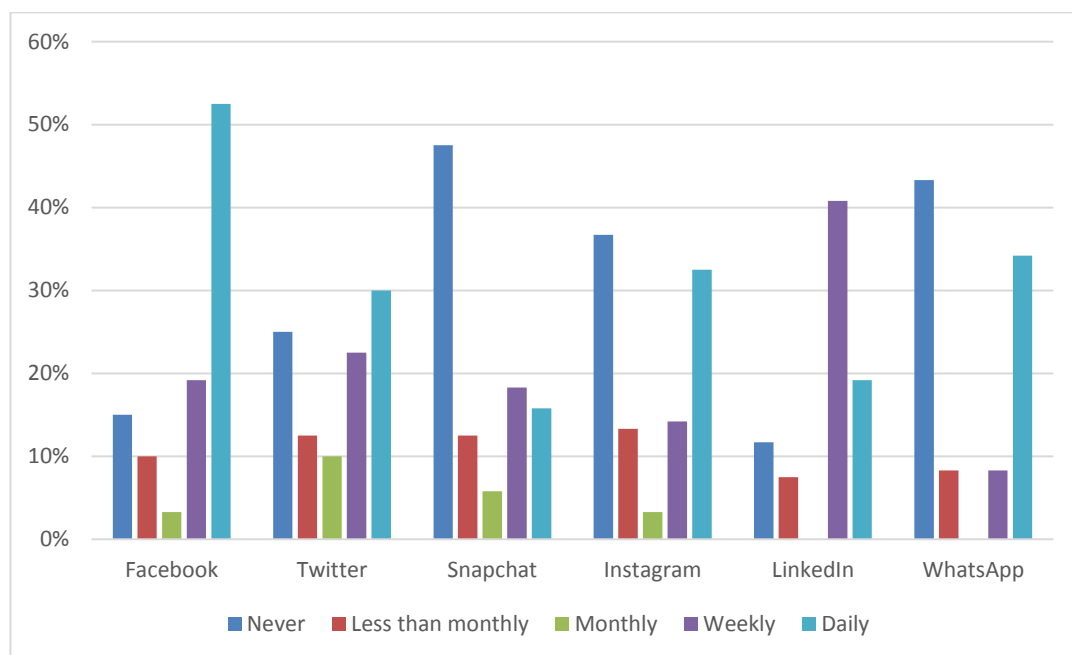


Figure 50 Overview of Enterprise workers use of social media at work in % (N=120)

As illustrated in Figure 51, the sample in the summative evaluation (sample 2) is more experienced compared to the sample in the formative evaluation (sample 1) in regard to gathering of insights in social media. This is illustrated when comparing the two samples in the Figure below.

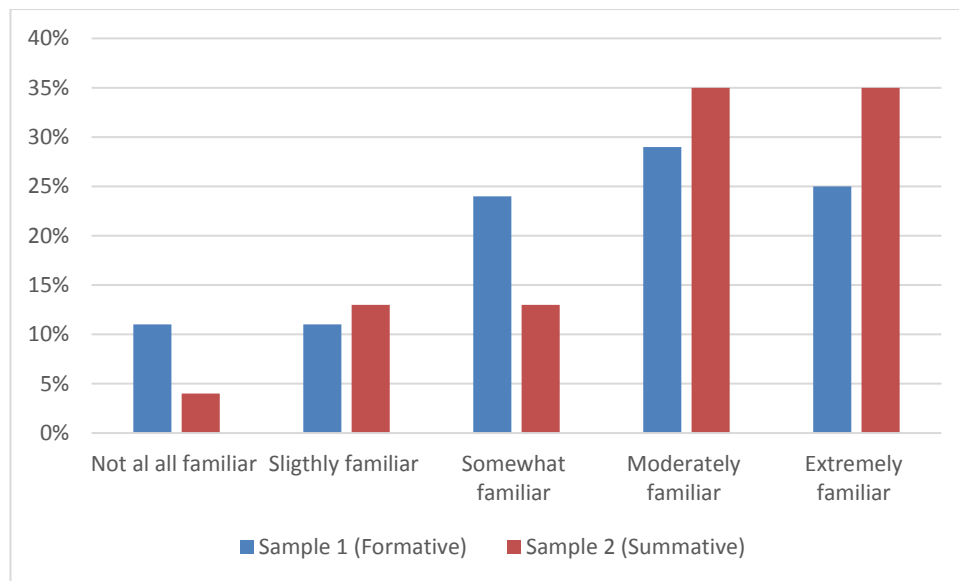


Figure 51 Comparing Sample 1 (N=90) and Sample 2 (N=120) in % "How familiar are you with gathering insights (about a brand, ideas etc.) from social media communities?"

4.3.2 Results of summative evaluation – Enterprise application

This section cover the results for the key modules of the Enterprise application.

4.3.2.1 Stream monitoring

The Stream monitoring feature was well received by the sample in this study. Yet, monitoring features are generally rated lower than the more analytical features, such as top users and top posts.

23:06:54 29.12.2016

To monitor what's going on in social media, you can set up streams based on key words, contributors, or events. The tool can provide streams for content from different social media services such as Facebook, Twitter, and your community platform. A screenshot of our suggestion for a social media stream monitor is presented below.

Overall, this stream monitoring functionality looks:

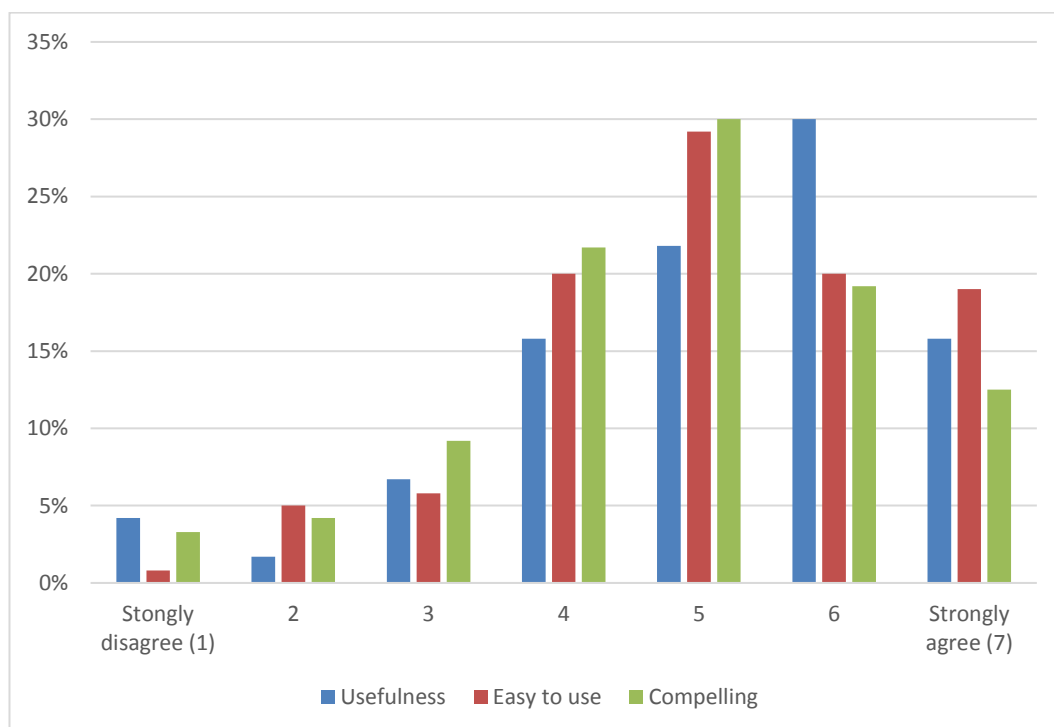
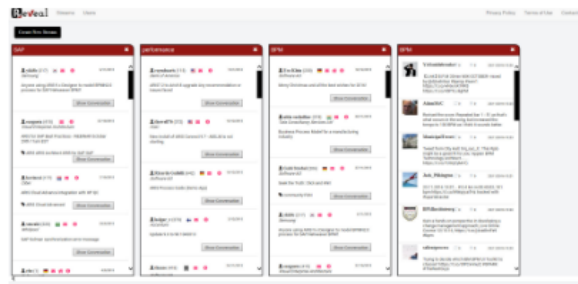


Figure 52 Results Stream monitoring in % (N=120)

4.3.2.2 Stream content analysis

23:08:51 29.12.2016

To provide a better overview of conversations in your community, we suggest a stream content analysis: The content of each stream in the social media stream monitor may be scrutinized in detail. For each stream you can access key tags through a word cloud, sentiment analysis (classifying a given text (e.g. negative, neutral, positive), top posts, top users, and details on each contributing user. A screenshot of the suggested solution is presented below.

Overall, this stream content analysis overview looks:

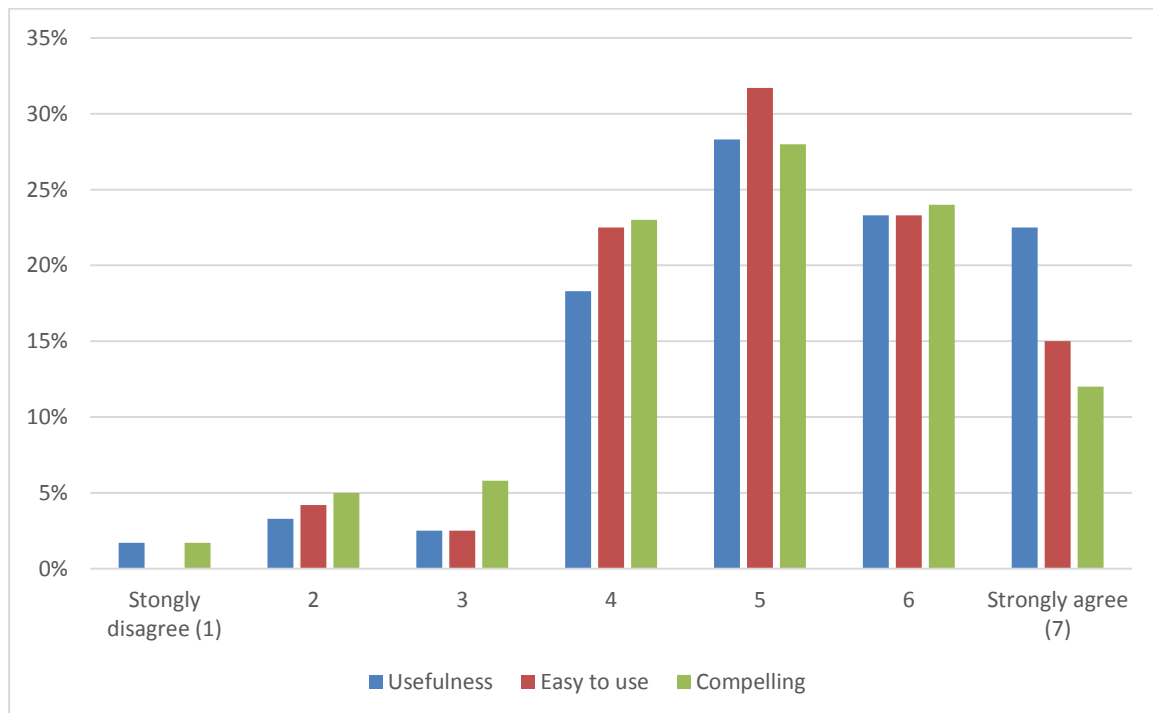
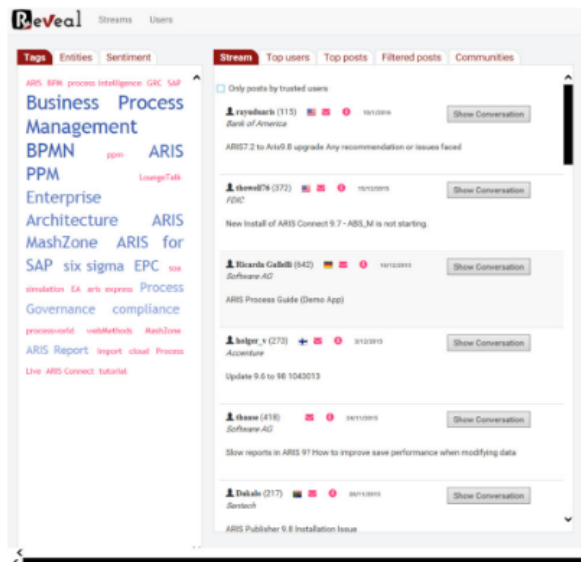


Figure 53 Results in % Content analysis (N=120)

4.3.2.3 Top Posts analysis

This is rated as the second most useful feature, with over 70% rating between 5 and 7 (strongly agree) on usefulness.

23:10:32 29.12.2016

We also suggest an easy view of Top Posts in your community: "Top Posts" is a particularly relevant feature, which provides immediate access to the most important content of a particular social media stream. Top Posts or content can be filtered on the basis of "number of views", "number of likes" and "number of comments". A screen shot of the Top Posts feature is provided below.

Overall, this tool for identifying Top Posts in social media looks:

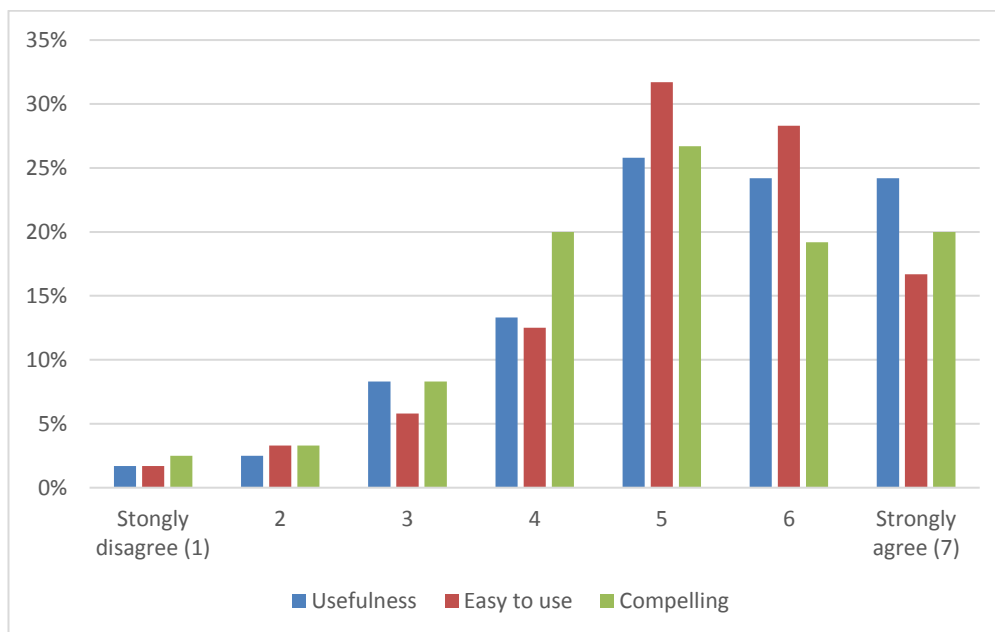
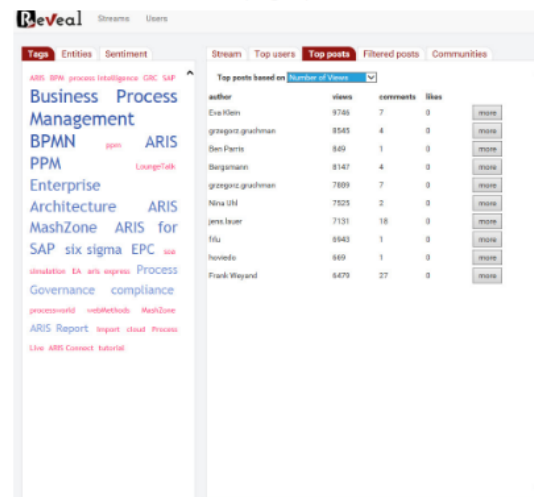


Figure 54 Results Top Posts in % (N=120)

4.3.2.4 Top Users analysis

This is regarded as the most useful of all features. Over 70% of the respondents rated this feature between 5 and 7 (strongly agree) on usefulness. In comparison to the Top user feature 4% more rated 7. Compelling and ease of use was rated to be lower than usefulness.

23:11:52 29.12.2016

Finally, we suggest a view to identify Top Users. For each stream, an overview of "Top Users" is provided. The "Top Users" of the stream can be selected based on different filters such as total posts, received likes, influence value, received comments, etc. The solution provides you with all available details of the contributor, such as name, role, affiliation, contact information, and contributor score, to help you assess the contributors' potential impact to the community (see right-hand panel) on the specific topic the stream catches. A screenshot of the suggested solution is presented below.

Overall, this tool for identifying Top Users looks:

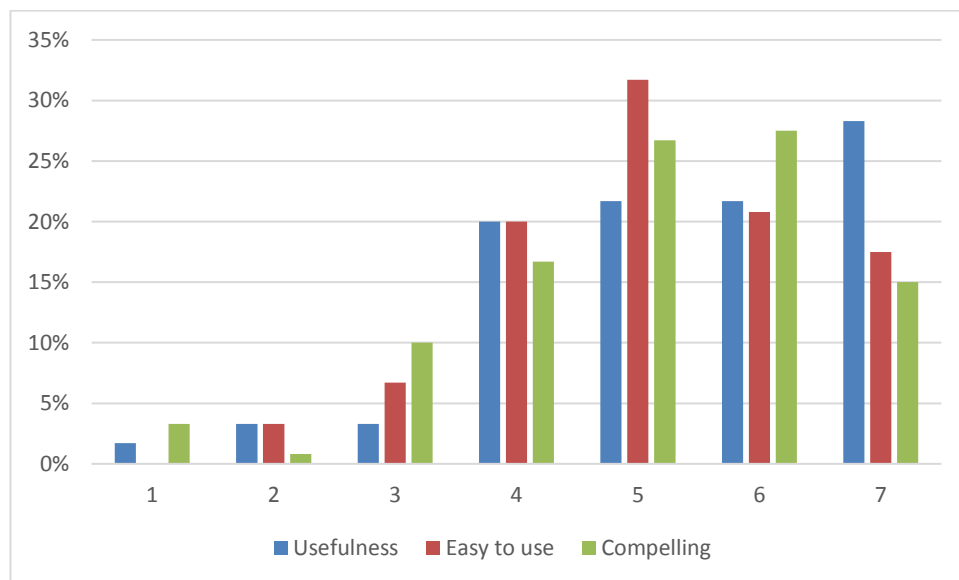


Figure 55 Results Top users in % (N=120)

4.3.3 Comparing modules in the Enterprise application

4.3.3.1 Comparing usefulness across modules

Top users and Top post are found to be the most useful features in comparison to Monitoring and Content analysis, as illustrated in the Figure below.

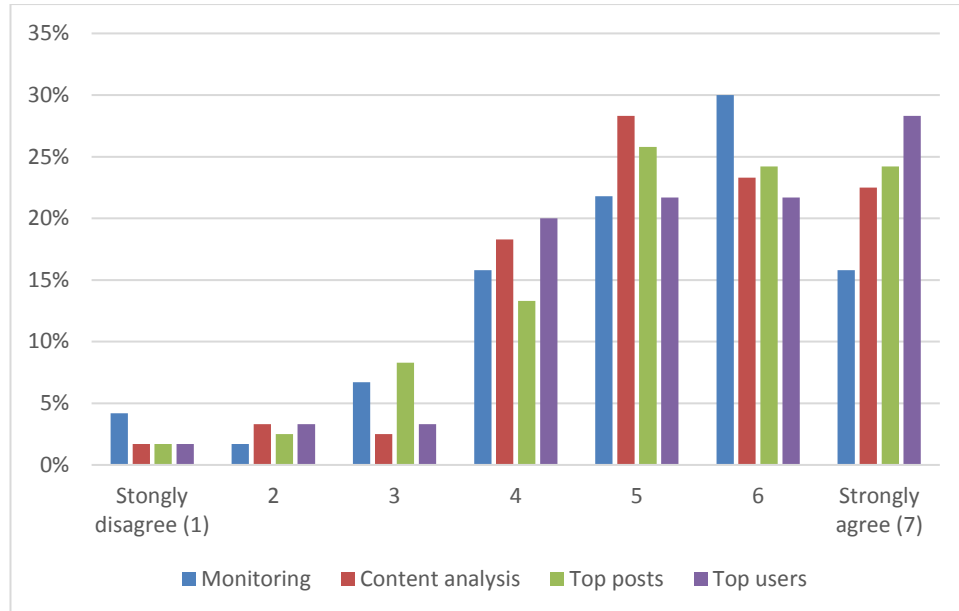


Figure 56 Comparing "useful" in % (N=120)

4.3.3.2 Comparing ease of use across modules

Figure 57 below shows small differences in ease of use across modules.

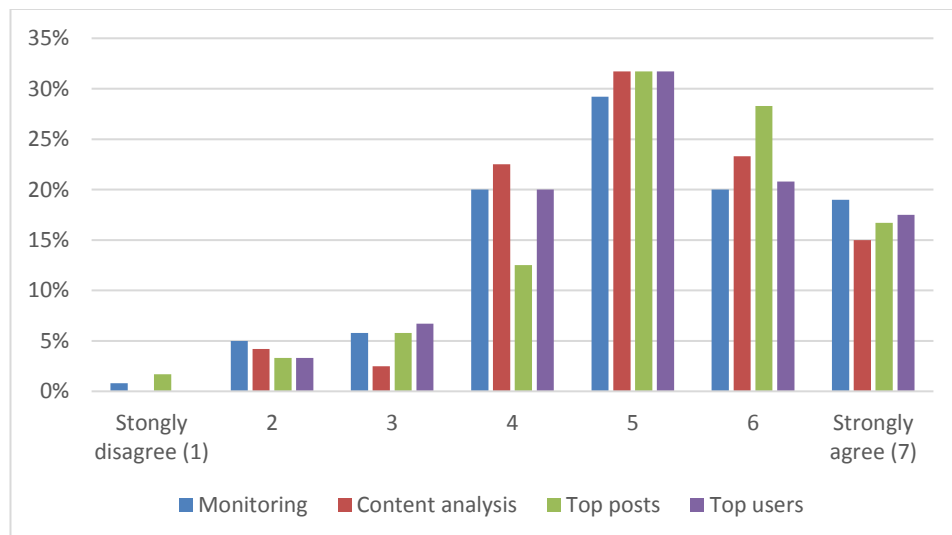


Figure 57 Comparing "easy of use" in % (N=120)

4.3.3.3 Comparing "compelling" across modules

Figure 57 below shows small differences in "compelling" across modules. Top users and Top content are rated slightly more compelling than other modules.

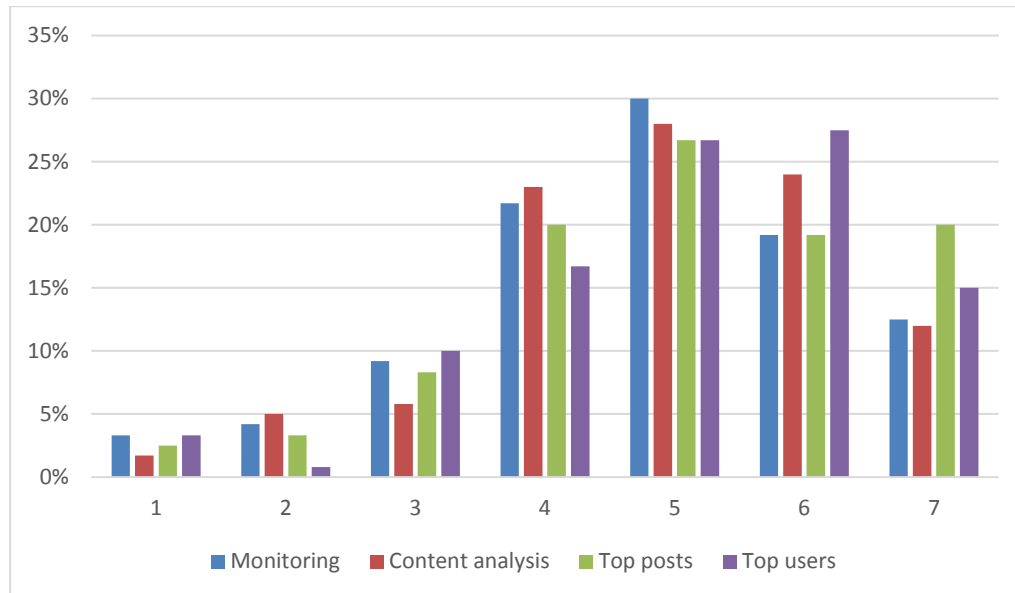


Figure 58 Comparing "compelling" in % (N=120)

Overall, the participants are more satisfied with the usefulness of the features rather than "ease of use" and how "compelling" they find it. In general, all features are regarded to be useful. The stream monitoring functionality are the least popular feature, but the differences are small. These findings are in line with the outcomes from the formative evaluation.

In the next section we confirm that the intention to use and trust in the REVEAL application is higher in the summative evaluation in December 2016 than in the formative evaluation in September 2016.

4.3.4 Intention to use and trust

Finally, we are comparing sample 1 (formative) and sample 2 (summative) in regard to intention to use and trust. We use sample 1 as a baseline in this comparison.

Intention to use is measured by the statement "Overall, if you had access to social media monitoring tools and services similar to those presented in this survey I would use these in my work"

Trust is measured by the statement " Overall, if you had access to social media monitoring tools and services similar to those presented in this survey I would trust that the monitor and highlight what I need for my work".

The results in Figure 59 show that the intention to use a similar application to REVEAL at work is higher in the summative evaluation than in the online questionnaire for formative evaluation. 66% strongly agree (5-7) with this statement. The summative sample was also more social media experienced compared to the formative sample, and are in this regard confirming the willingness to use such an application.

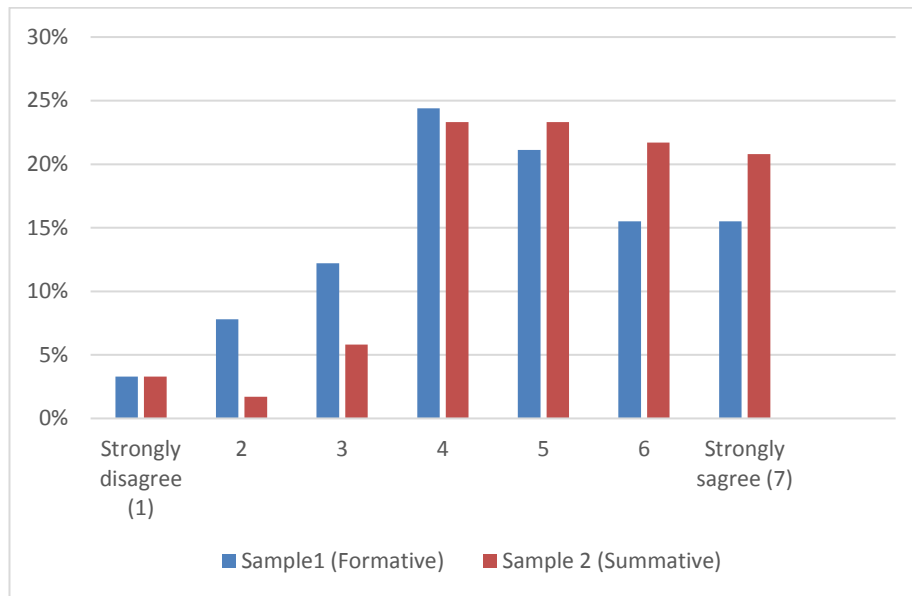


Figure 59 Intention to use in % comparing sample 1 (N=90) and sample 2 (N=120)

The results in Figure 60 also shows that trust is perceived higher among the summative sample compared to the formative sample.

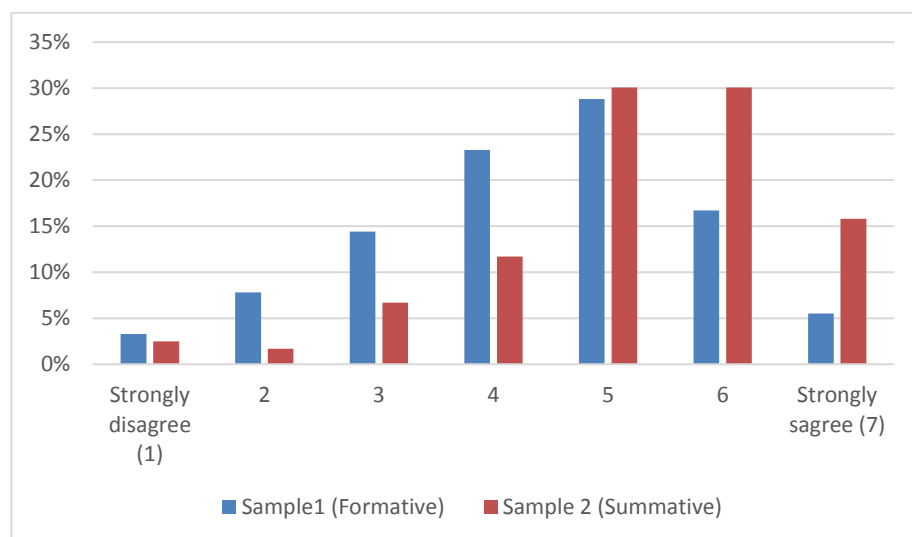


Figure 60 Trust in % comparing sample 1 (N=90) and sample 2 (N=120)

The results illustrated in the figure above are confirmed in the responses to the open questions: Those who responding low on usefulness also admitted to use social media less for work, while respondents using social media at work typically highlighted the usefulness and trustworthiness of the application:

*They all looked very trustworthy and like something I would use **US Product manager, 25-34 years, female**).*

*To help me find more high profile employees in the company to be cognizant of and to possibly establish the right networks (**US Community manager, 25-34 years, male**)*

*I could get the information I need quicker than I would get it myself from several sources. (**US Consultant, 25-34 years, male**)*

*They present valuable information in a usable format. (**US Consultant, 45-54 years, male**)*

*Looking at the screen shots, it appears to have much of the relevant data I would want to use to make decisions and see how my social media campaign is working (**US Consultant, 35-44 years, male**)*

*Yes it's satisfies my need and make to use this tool for my business and work communication. it's more appealing and easy to us (**US Product manager, 35-44 years, female**).*

4.3.5 Conclusion summative evaluation – Enterprise application

The summative questionnaire evaluation (N= 120) shows that all the major features in the REVAL-enterprise application score quite high among the respondents concerning usefulness. The participants are on average also more happy with the usefulness of the features rather than "ease of use" and how "compelling" they find it.

Overall, respondents score on average 5 (quite strongly agree) that they will use the tools at work if they "had access to services similar to those presented in this survey". This is not only confirming the findings from the formative evaluation, but are showing that changes made in the application over the last six months probably have enhanced the perceived satisfaction level of REVEAL, both with regard to the trust-level and intention to use.

Yet, also among Enterprise workers we see a trend to use more different social media platforms, as well as hidden and private ones such as WhatsApp. As for the Journalist application this can be a future challenge also for the Enterprise application.

5 Legal evaluation and policy recommendations

This section presents the legal evaluation and policy recommendations that stemmed during the course of REVEAL project.

5.1 Introduction

Legal research in REVEAL focused on three main areas: 1) privacy and data protection, 2) intermediary liability, and 3) media law and freedom of expression. These three areas were crucial for the development of the REVEAL concept. Each area consists of specific concepts and issues that had to be analysed and implemented in the context of REVEAL. In a series of D1.2 deliverables a set of legal requirements was provided addressing issues encountered in REVEAL, specific for each area. The legal analysis in REVEAL was conducted mainly in WP1, in task T1.3. The legal research was distributed throughout the project lifetime.

In the first year of the project the main focus was on privacy and data protection. This issue was considered to be the most pressing with practical implications for the project. Since the project involved processing of personal data from social media, this aspect was also considered crucial from the perspective of ethics. The results of the conducted research were presented in WP1 deliverable **D1.2 - Legal /regulatory requirements analysis – Privacy and Data Protection**. In the following years of the project, the legal research focused on intermediary liability aspects of REVEAL (**D1.2a- Legal /regulatory requirements analysis – Intermediary Liability**), media law and freedom of expression (**D1.2c- Legal /regulatory requirements analysis – Media Law and Freedom of Expression**). The division of work into three areas, however, was not strict. The research on the privacy and data protection aspects continued also in the following years of the project. For example, an additional deliverable was produced addressing specific issues in the area of data processing activities in social media (**D1.2b- Legal /regulatory requirements analysis - Processing Personal Data from Social Media and Social Media API Terms & Conditions**). The same document addressed the question of compliance with the social media API Terms and Conditions. Provision of an additional deliverable was considered necessary due to the specificity of the legal research in scientific project like REVEAL. In order to keep up with the project developments constant monitoring was conducted of the technical progress in the project, as well as the changes in the policy regulations. This means that a continuous re-evaluation was performed in light of the research findings of all the partners in the project. In case of any changes, or new discoveries, such approach allowed for a swift update of the legal requirements and provision of additional guidance. Moreover, the findings of the legal research and articulated legal requirements were consulted with the REVEAL Ethical Board. The EAB in REVEAL consisted of three specialists in the area of IT law and ethics:

- Prof. Dr. Cecilia Magnussen-Sjoeberg, Swedish Law & Informatics Research Institute, Sweden;
- Prof. Ioannis Iglezakis - Faculty of Law Aristotle University, Greece;
- Prof. Dr. Nikolaus Forgo, Director of Institute for Legal Informatics - IRI, Leibniz University of Hannover, Germany.

Consultation with the members of the EAB took place during meetings and teleconferences. Their recommendations provided REVEAL with additional guidance toward legal and ethical compliance and were duly taken into account.

The legal/ regulatory requirements evaluation (task T7.3) was conducted by the REVEAL legal partner, CITiP –KU Leuven. This task is a continuation of the work done in other work packages. Specifically, research in WP7 builds upon the finding in WP1. Therefore, a first goal of this task was to conduct an evaluation that would answer if, and to what extent, REVEAL complied with the legal requirements articulated in the series of deliverables D1.2. Task T7.3, however, provides also a forward looking perspective. Whereas legal activities in WP1 were focused on the impact that existing rules may have had on the technologies to be developed in the context of REVEAL, task T7.3 took the opposite stance. A second goal of this task, therefore, was to answer the following question: what could be the impact of the new technologies on the existing rules? Moreover, how should these rules be modified to remain fair and effective? The purpose of this sub-task is to help shaping the future regulations that would be capable of better addressing the problems posed by the current (and future) technical developments. Basing on the research findings from the project, REVEAL attempted to answer this question by formulating a set of policy recommendations. The policy recommendations are directed to different stakeholders, mainly policy makers - such as the European Commission, but also developers, and researchers. The main goal of the recommendations is to share the experience obtained in REVEAL, raise the awareness about the encountered legal issues and point out problematic areas, which could be improved.

5.2 Legal evaluation

The planned legal/ regulatory requirements evaluation consists of several steps. First, it is assessed whether the legal requirements and guidance described in the legal deliverables (D1.2, D1.2a, D1.2b and D1.2c) were respected and adhered to in the process of technical development. Apart from the legal deliverables, assessment is conducted for compliance with an internal REVEAL document 'Legal assessment and recommendations', which provided practical recommendations on how to address legal issues in the project. The document was composed after a detailed interview with each technical partner discussing all the planned functionalities. Recommendations were provided for the general issues in the project, as well as for the two scenarios in the research phase of the project: journalistic and enterprise.

The main question is whether the chosen legal solutions were properly implemented, in a way that ensures compliance with the existing law. Compliance assessment and evaluation, however, is not an exercise to be left for the very end of a research project. The exercise consisting of monitoring of the requirements implementation took place continuously throughout the project lifetime. This is because the technical side of the project was a dynamic process and certain specifications have changed throughout the project duration. Similarly, the law is not static, and its provisions and interpretations change, albeit considerably slower than technology. The role of a legal partner in a project is to assist and guide the consortium towards legally compliant solutions from the beginning of a project until its end. The analysis provided in this section, therefore, is merely a description and a summary of the implementation process that took place throughout the whole project duration.

Next, this section describes a conducted gap analysis during which we analysed whether the existing regulatory framework is sufficiently conducive towards achieving its (existing or future) objectives. Moreover, this section describes legal obstacles faced in the project and examines whether any of the initially planned solutions were hindered by the currently existing laws and regulations.

5.2.1 REVEAL platform – compliance with legal requirements

In deliverable D1.2 it was established that activities in REVEAL constitute processing of personal data. As a consequence, REVEAL had to comply with a number of formal requirements, specified in the data protection legislation. For example, project partners had to clarify which of them would take on the role of a data controller, which is the main entity responsible for the processing activities. Classification as a data controller allows assigning responsibility but also determines applicability of the national data protection legislation. Moreover, clarification of the role of other partners was necessary to establish if they would be acting as co-controllers or data processors. As a result, appropriate agreements between the partners had to be signed. General recommendations for the REVEAL platform addressed also issues related to removal of infringing content and possible liability of the platform for infringing third-party content. In addition, recommendations were made with regard to compliance with the Terms and Conditions of social media API (Application Programming Interface). A summary explaining how REVEAL addressed all the listed issues is provided below.¹⁹

5.2.1.1 Data controllership in REVEAL

To assess compliance of a data processing activity with the law, first, the responsible party has to be established. In order to properly attribute rights and obligations of the parties, identification of their role and the level of involvement in the processing activities is necessary. The Data Protection Directive has foreseen two roles for the entities involved in processing of personal data: they could be either data controllers or data processors. Generally, it is the data controller who is liable for violations of the Data Protection legislation, while the liability of the data processor is limited. Moreover, the applicable national legislation depends on the location of the data controller's establishment.

In REVEAL the role of the data controller was performed by the partner ATC, located in Athens, Greece. All the technical components that were developed by other partners were delivered to ATC who integrated and hosted them, together with the whole REVEAL platform, on their servers. Ideally, the project consortium should play the role the controller. A research consortium in FP7 projects, however, does not have legal personality therefore it cannot be a subject of legal obligations. Also, joint controllership of all the partners would be difficult to justify. After all, they do not have the same level of involvement with regard to the actual processing activities. Consequently, the partner ATC, who is the technical coordinator in the project, was established to

¹⁹ For the full explanation and analysis see the relevant legal deliverables in REVEAL: D1.2 - Legal /regulatory requirements analysis – Privacy and Data Protection; D1.2a- Legal /regulatory requirements analysis – Intermediary Liability; D1.2b- Legal /regulatory requirements analysis - Processing Personal Data from Social Media and Social Media API Terms & Conditions; D1.2c- Legal /regulatory requirements analysis – Media Law and Freedom of Expression.

be the data controller. ATC has been consistently mentioned as such in the relevant documents like REVEAL Privacy Policy.

5.2.1.2 Role of the REVEAL partners

In today's complex technological reality it is possible that an entity will play more than one role for different activities or different sets of data. Moreover, this role could be overlapping with the roles of other entities. A clear distinction between different roles, such as controllers and processors, can be extremely challenging to define.

In REVEAL the partner ATC was acting as a data controller. Other technical partners acted as data processors, which processed personal data on behalf of the data controller. Specific controller – processor agreements were signed between these partners. The agreements described the roles and responsibilities of all the partners and specified the processing activities allowed in the project. No other processing activities by the project partners, with regard to the collected data, were permitted. Moreover, for the enterprise scenario, partner Software AG provided access to a data set. For this specific data set, partners in the project acted as co-controllers. Specific agreements between Software AG and other partners we signed. The agreement included also non-disclosure clauses to protect personal used in the enterprise scenario from further re-use or disclosure.

5.2.1.3 Definition of applicable national legislation

As described above, the REVEAL partner ATC, based in Athens, Greece was defined as data controller for the processing of personal data of users within the frame of the REVEAL project. Therefore, the Greek data protection law (law 2472/1997) has been defined as the applicable legislation in relation to the processing of personal data in REVEAL. This information is explicitly provided to the users in the REVEAL Privacy Policy and Terms & Conditions (see outline below in in Figure 60 and 61)²⁰. The necessary communication with the Greek Data Protection Authority has been realised by ATC (with assistance of KU Leuven), and the required notification to the Greek DPA has been filed.

²⁰ For the full Reveal Privacy Policy see Annex to the deliverable D1.2b- Processing personal data from Social Media and Social Media API Terms& Conditions

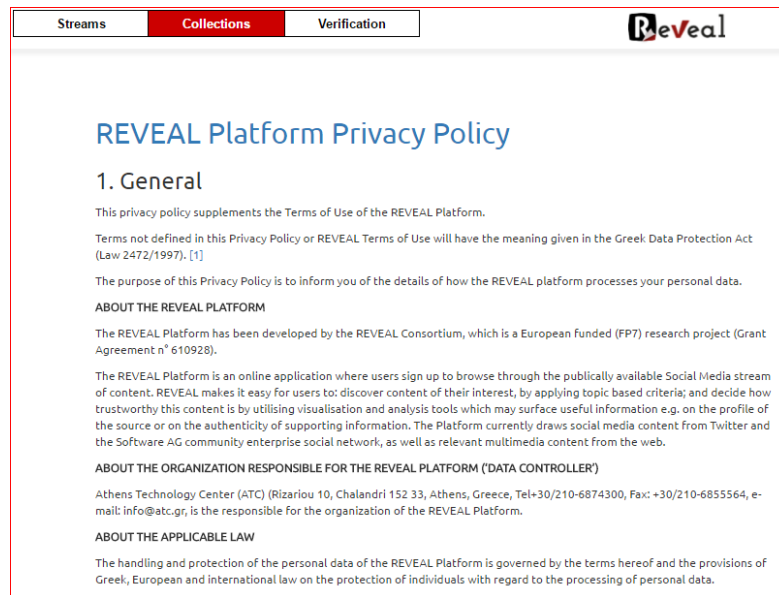
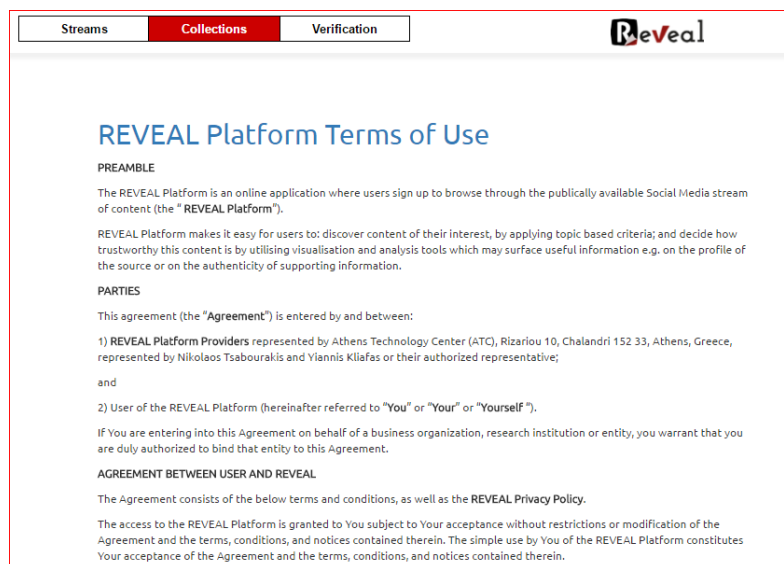


Figure 61 Outline of Privacy Policy in REVEAL

Figure 62 Outline of Terms of Use REVEAL²¹

²¹ For the full Reveal Terms of Use see Annex to the deliverable D1.2b- Processing personal data from Social Media and Social Media API Terms& Conditions

5.2.1.4 Legal grounds for processing personal information in REVEAL

Under EU law, the processing of personal data has to be based on one of the grounds mentioned in Article 7 of the Data Protection Directive (and Article 6 of the Greek Data Protection law). This requirement applies also to the research projects. Moreover, it applies also in cases where users make their personal information publicly available.

In REVEAL, two grounds for processing personal information are relevant, namely, ‘consent’ and ‘legitimate interest of the controller’.

Consent is used in the enterprise scenario, for the processing activities involving communities or closed topical groups. Participants of such communities, through a request for consent, are informed of all the details of the processing activity, such as, the responsible party, contact point, and the way to exercise their rights (e.g. to have their data erased when they quit the Community). Moreover, the details are provided for the Community/ group creator as well as for Reveal.

For the activities in REVEAL, related to observing, searching through and displaying content from social media (in both scenarios), the applicable legal ground for processing of personal data is ‘legitimate interest of the controller’.²²

In REVEAL we can distinguish several specific interests of the controller:

- In the journalistic scenario, the legitimate interest of the controller is to provide discovery and verification tools contributing to exercising of freedom of expression and access to information.
- In the enterprise scenario, the legitimate interest of the controller is to provide discovery and verification tools allowing enterprises to reach their customers, and provide them with better support and services.
- At the research phase of the project, the legitimate interest of the controller is to conduct scientific research in the area of social media content verification.

The interests of the data controller in REVEAL are legitimate and compelling. Interference with the rights and interest of the data subjects, especially the right to privacy, is not significant. REVEAL does not create profiles of the individuals by automatically pulling all the available personal data on social media and storing and displaying it in the form of directory for future reference via REVEAL platform. Processing of personal data by REVEAL does not produce legal effects concerning the data subject nor does it significantly affect their interests, rights or freedoms. Reasonable expectations of privacy of the social media users are respected. REVEAL only targets information that is publically available and can be freely accessed through other search methods. The innovation of REVEAL lies in facilitating search functionality by arranging search results according to new criteria (modalities).

²² For the full analysis see deliverables D1.2 - Legal /regulatory requirements analysis – Privacy and Data Protection; and D1.2b- Legal /regulatory requirements analysis - Processing Personal Data from Social Media and Social Media API Terms & Conditions.

To ensure that the rights and interests of the data subjects are not unduly interfered with REVEAL applies a number of additional safeguards (see *Infra*).²³

5.2.1.5 Providing transparent information

Under the Data Protection Directive, as well as under the Greek Data Protection law, data controller should be transparent about the performed data processing activities. This means that information should be easily available to the data subjects about: the purpose of the processing, the data or the categories of data, the recipients or the categories of recipients of the data, as well as the name, the company name and the address of the data controller or their representative. The required information has been provided in the REVEAL Privacy Policy, available on the REVEAL platform. REVEAL Privacy Policy provides also contact details to request more information, or clarification, if necessary. Additional information about the REVEAL platform, its purpose, and the rules of the site are provided in the REVEAL Terms of Use.

5.2.1.6 Compliance with the right to object

The data controller is held accountable for meeting the obligations within the framework of its responsibilities, powers and capabilities. The expectations towards data controllers, therefore, must remain within reason. This refers, for example, to the notification obligation, which in the context of REVEAL would be impossible or would involve a disproportionate effort (and would involve additional processing of personal data). The requirements stated by the data protection legislation are satisfied in REVEAL by providing data subjects with a possibility to opt-out from the processing (e.g. through the delisting request). This is achieved by providing web forms that allow objecting to processing and requesting deletion of personal data from REVEAL platform. The web form ensures also that REVEAL complies with the obligation to respect data subjects' rights, in this case the right to object (art. 14 Data protection Directive and art. 17 GDPR).²⁴

5.2.1.7 Collection of sensitive data

Sensitive data is a special category of personal data, which requires additional protection. The list of sensitive data consist of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership, and the processing of data concerning health or sex life. Under Article 8 of the Data Protection Directive, processing of sensitive data is prohibited unless the data controller can rely on one of the grounds listed in Art. 8(2) DPD. Sensitive data can only be processed when users have given their explicit consent or when the data have been made manifestly public by the data subject.

REVEAL, as recommended, does not allow for intentional collection of sensitive personal data (e.g. by introducing filters such as: religion, medical condition, racial or ethnic origin, etc.). Accidental collection of sensitive data might nevertheless occur (e.g. racial origin known from a profile

²³ For the full analysis of the issue in REVEAL see deliverables D1.2 - Legal /regulatory requirements analysis – Privacy and Data Protection; and D1.2b- Legal /regulatory requirements analysis - Processing Personal Data from Social Media and Social Media API Terms & Conditions.

²⁴ For the full analysis of the issue in REVEAL see deliverables D1.2 - Legal /regulatory requirements analysis – Privacy and Data Protection; and D1.2b- Legal /regulatory requirements analysis - Processing Personal Data from Social Media and Social Media API Terms & Conditions.

picture). The general prohibition to process such data is not applicable when sensitive personal data is made ‘manifestly’ public by the data subjects. In the case of REVEAL, that would mean, for example, by disclosing the data on social media.

5.2.1.8 Removal of infringing content

REVEAL, as an information society service, and an intermediary, runs a risk of being held liable for facilitating access to infringing or illegal content created by third parties. For this reason REVEAL platform should act responsibly, by applying a standard requirement of reasonable duty of care, and by complying with the conditions for liability exemption specified in the E-commerce Directive. To achieve this result, REVEAL provides a possibility to file a notification, through a web-form, where a complaint about infringing or illegal content can be made, together with a request for removal of such content. REVEAL platform respects removal requests by entities whose rights might have been infringed (e.g. through defamatory statements or copyright violations). Moreover, REVEAL respects ‘robot.txt’ (or codes such as ‘noindex’ or ‘noarchive’) and updates its database to react to any changes to content at the original source (communicated via API, e.g. tweets removed from Twitter are no longer accessible via REVEAL).²⁵

REVEAL takes every reasonable step to update the stored content to make sure that infringing content removed from the original sources (e.g. social media) does not continue to exist in the REVEAL platform. The measure ensures compliance with the data accuracy obligation and ensures affirmative liability protection.

5.2.1.9 Compliance with the API T&C

Compliance with the social media sites’ API Terms & Conditions (hereinafter “T&C”) is crucial in the development process. The REVEAL partners have reviewed the API T&C’s of Twitter, Facebook and LinkedIn early in the project’s lifecycle, to ensure compliance of the REVEAL platform with these policies.²⁶ One of the main discoveries in the project was that there is no exception for research purposes. REVEAL complied with the rules provided in the T&C’s of the targeted social media. Yet, restrictions in the API T&C’s had a great impact on (certain functionalities of) the REVEAL project. The conducted analysis proved quickly that the task of complying with some of the API T&C’s of social media providers would be extremely difficult, or even impossible. As a direct result of the API T&C’s, currently REVEAL does not support the LinkedIn platform. As a solution, the partners considered a possibility of entering into a partnership programme with LinkedIn. It was not possible, however, at the development stage, since a demonstrable application is necessary to be able to apply for the partnership programme. Enhancing REVEAL platform with LinkedIn is still possible and will be considered (through a partnership) at the exploitation phase of the project.

²⁵ For the full analysis of the intermediary liability issues in REVEAL see deliverable D1.2a- Legal /regulatory requirements analysis – Intermediary Liability.

²⁶ For the full analysis of the issue in REVEAL see deliverable D1.2b- Legal /regulatory requirements analysis - Processing Personal Data from Social Media and Social Media API Terms & Conditions.

5.2.1.10 Appropriate use of the platform

REVEAL does not take responsibility for the subsequent actions of the end users. This is clarified in the REVEAL Terms of Use. If the end users decide to use the found content and related personal data they do it in their own capacity. For example, this refers to situations where a journalist decides to use the found information in a news story, or where an employee of a software company decides to contact members of a community to address their concerns. Even though the content was found through the REVEAL platform, its subsequent use constitutes a separate category of use the purpose of which is determined by the end users (e.g. the journalists). The new purpose is, therefore, not related to the processing conducted by REVEAL for the discovery of the content. In such a case end users need to comply with the laws and rules that apply to such situation normally (e.g., applicable law, codes of ethics, internal house rules).²⁷

5.2.2 Conclusion

REVEAL took compliance with law seriously. Throughout the project the legal partner participated in the development of the platform. The process required a continuous dialog between all the partners to ensure proper exchange of information about the development process. Legal requirements were articulated in a number of deliverables, according to the topic. Every deliverable was presented to the REVEAL Ethical Advisory Board, consisting of three specialists in the field of law and ethics.²⁸ The REVEAL EAB provided useful comments and suggestion about the legal implementation process. The requirements were discussed and updated accordingly to the progress of the technical partners. Certain functionalities, for example, detection of alternative accounts had to be dropped due to the legal constraints. For the same reasons the use of LinkedIn had to be abandoned, at least at the current stage of the project. Compliance with the applicable privacy and data protection regime is a crucial aspect that allows considering a project as ethically viable. Legal and ethical compliance has been an important goal of REVEAL. It has been, therefore, the first issue addressed in the legal work of the project. It was complimented, respectively, by considerations in the areas of intermediary liability, media law and issues related to the right to freedom of expression. Every legal consideration presented above has been taken into account by the REVEAL project. All legal requirements and recommendations articulated throughout the project lifetime have been satisfied.

5.3 Policy recommendations

The REVEAL project is a great case study depicting how new technologies and legal frameworks interact with each other. Lessons learned in REVEAL provide an opportunity to share the findings and raise awareness about the encountered problems. Next, these findings can be translated into a set of recommendations, for policy makers, legal experts, developers and researchers alike. The following section addresses the question: what could be the impact of the new technologies on the existing rules? The purpose of this sub-task is to help shaping the future regulations that would be capable of better addressing the problems posed by the current (and future) technical

²⁷ For the full analysis of the issue in REVEAL see deliverables D1.2 - Legal /regulatory requirements analysis – Privacy and Data Protection.

²⁸ See Introduction

developments. To the extent that legal research aims to be not only descriptive (compliance), but also normative in its analysis, an additional step consisting of policy recommendation is necessary. Basing on the lessons learned in the project, we can indicate where modifications to the existing laws are necessary. The goal is to contribute to the improvement of the legal framework that would allow it to keep up with new technologies and, at the same time, continue to fulfil its role in achieving policy objectives (such as protection of individuals or elimination of illegal online content).

Providing policy recommendations is a particularly interesting exercise, considering recent changes in EU legal framework. The legal framework for data protection in the EU has been recently revised. The new data protection regulation will enter into force in May 2018.²⁹ The text of the new regulation is fixed and agreed on and no changes are expected. Yet, there are certain issues in the new GDPR that create confusion among the stakeholders. We will explain why the issues (related to the REVEAL area of interest) would benefit from further clarification. The e-Commerce Directive, which addresses the intermediary liability issues, is currently under the review process.³⁰ It is hence an excellent moment to discuss the impact of the new technologies on the existing rules.

5.3.1 Privacy and data protection³¹

5.3.1.1 Reform of EU data protection rules

Throughout the 2000s, the European Commission issued several communications reporting on Directive 95/46's implementation.³² By the beginning of the 2010's, the Commission made clear its intentions to revise the legal framework for data protection in the EU.³³ On January 25th, 2012, the European Commission proposed a comprehensive reform package, notably including the General Data Protection Regulation.³⁴

On 15 December 2015, the European Parliament, the Council and the Commission reached agreement on the new data protection rules, establishing a harmonised data protection framework

²⁹ EU General Data Protection Regulation State of play and 10 main issues, Lead EP Committee: Committee on Civil Liberties, Justice and Home Affairs (LIBE), Rapporteur: Jan Philipp Albrecht, Greens/EFA, 7 January 2015, <http://www.statewatch.org/news/2015/jan/ep-dp-state-of-play-10-points.pdf>.

³⁰ The EC on the Notice and Action Initiative: http://ec.europa.eu/internal_market/e-commerce/notice-and-action/index_en.htm. See also: A. Kuczerawy, "Intermediary Liability & Freedom of expression: Recent developments in the EU Notice & Action Initiative", Computer Law and Security review, Vol. 31, Issue 1, 2015, pages 46-56.

³¹ This section is based on the research conducted by Jef Ausloos, in the context of his doctoral research at the KU Leuven Centre for IT and IP Law (CiTiP).

³² As is required by Article 33 of Directive 95/46.

³³ European Commission, 'A Comprehensive Approach on Personal Data Protection in the European Union' (2010) Communication From The Commission To The European Parliament, The Council, The Economic And Social Committee And The Committee Of The Regions COM(2010) 609 final <ec.europa.eu>.

³⁴ European Commission, 'Press Release: Commission Proposes a Comprehensive Reform of Data Protection Rules to Increase Users' Control of Their Data and to Cut Costs for Businesses', http://europa.eu/rapid/press-release_IP-12-46_en.htm?locale=en

across the EU. The text of the new framework was adopted on 8 April 2016 by the Council and on 14 April 2016 by the European Parliament. The official text of the new framework has been published in the EU Official Journal on 4 May 2016.³⁵ The new data protection framework consists of the General Data Protection Regulation³⁶; and Directive 2016/680.³⁷

One of the key goals put forward by the GDPR, relates to “strengthening and detailing the rights of data subjects”.³⁸ With data protection having achieved fundamental right status, it has become crucial to ensure effective, credible and easy accessibility to measures aimed at protecting individuals in this regard. In a free and democratic society, the Commission explained, “the individual must have reassurance that fundamental rights are respected.”³⁹ The Regulation has sharpened the requirements for consent as a legitimate ground for processing⁴⁰ and dedicates a Chapter specifically to data subject rights. The introduction of two separate provisions on the right to erasure – also known as the “right to be forgotten” (Article 17) and the right to data portability (Article 20) further confirm the aim of strengthening the individual’s position as much as possible.⁴¹

5.3.1.2 The right to erasure/ the right to be forgotten

The introduction of a specific ‘Right to be Forgotten and to Erasure’ in the European Commission’s proposal for a GDPR provoked a wave of criticism.⁴² Yet, the provision survived four years of fierce negotiations and is now firmly established as a clear and autonomous data subject right. From a practical perspective, article 17 GDPR primarily spells out and strengthens principles that were already implied in Article 12 Directive 95/46. The provision is primarily aimed at empowering

³⁵ European Commission, Reform of EU data protection rules, http://ec.europa.eu/justice/data-protection/reform/index_en.htm.

³⁶ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1–88.

³⁷ Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA, OJ L 119, 4.5.2016, p. 89–131.

³⁸ “... and the obligations of those who process and determine the processing of personal data.” Recital 9, GDPR.

³⁹ European Commission, ‘Impact Assessment Accompanying the Proposals for General Data Protection Regulation and Directive on Data Protection in Police and Judicial Matters’, p. 30.

⁴⁰ Colette Cuijpers, Nadezhda Purtova and Eleni Kosta, ‘Data Protection Reform and the Internet: The Draft Data Protection Regulation’ (TILT 2014) SSRN Scholarly Paper ID 2373683 5–6, <http://papers.ssrn.com/abstract=2373683>

⁴¹ De Hert and Papakonstantinou, “The Proposed Data Protection Regulation Replacing Directive 95/46/EC,” p. 136–137.

⁴² See for example Mike Masnick, ‘Why Can’t Europe Just Forget The Ridiculous Idea Of A “Right To Be Forgotten”’, www.techdirt.com/articles/20120129/23085517583/why-cant-europe-just-forget-ridiculousidea-right-to-be-forgotten.shtml; Adam Thierer, ‘Europe’s “Right to Be Forgotten”: Privacy as Internet Censorship’, <http://techliberation.com/2012/01/23/europesright-to-be-forgotten-privacy-as-internet-censorship/>; Jane Yakowitz, ‘More Crap From the E.U.’, <http://blogs.law.harvard.edu/infolaw/2012/01/25/morecrap-from-the-e-u/>; Jeffrey Rosen, ‘The Right to Be Forgotten’ (2012) 64 Stanford Law Review Online 88.

individuals, rendering more effective their ability to have personal data removed “if there are no legitimate grounds for retaining it.”⁴³ The main added value of Article 17 is that it removes (or at least, drastically reduces) uncertainty as to the existence and conditions for applying such a right as well as explicitly recognise potential conflicts, notably with information freedom.

Article 17 GDPR on the Right to Erasure (‘right to be forgotten’) has a three-part structure. The first paragraph sets out six situations in which the right can be invoked; the second paragraph defines an obligation on controllers in case the personal data at stake has been made public; and the third paragraph frames five exceptions to the applicability of the right to erasure.

From the perspective of REVEAL the most interesting issue is presented by one of the exceptions in Article 17.3(a) GDPR, which provides an exemption *for exercising the right of freedom of expression and information*.

5.3.1.3 Freedom of expression and the right to erasure

Article 17 on the right to erasure, contains an explicit exemption clause for situations where the “processing of personal data is necessary for exercising the right of freedom of expression and information.”

This first exemption is aimed at neutralising the most common criticism to the right to erasure. Removing information published online, regardless of it being personal data or not,⁴⁴ has always raised legitimate concerns. It was feared that Article 17 GDPR was to put in place yet another opportunity to ‘censor the Internet’. In light of these concerns, the legislator installed a considerably wide exemption for processing operations that are necessary to exercise the right to freedom of expression and information (Article 17(3)a). The first exemption to the right signals the legislator’s awareness of the risk and the intention of preventing abuse of the right that could hamper freedom of expression and information rights.

On the face of it, the exemption seems quite evident and maybe even redundant. Of course a fundamental right (i.e. right to the freedom of expression and information in Art.11 Charter) takes precedence over a (non-fundamental) right in secondary EU legislation (i.e. Article 17 GDPR). As a result, Article 17(3)a does *not* in itself install a balancing exercise. Such balancing exercise between fundamental rights would come into play only when the inapplicability of the right to erasure (pursuant to Article 17(3)a) would lead to an interference with the fundamental right to data protection (Article 8 Charter).

⁴³ Viviane Reding, ‘The EU Data Protection Reform 2012: Safeguarding Privacy in a Connected World’ (Press Conference on the Presentation of the new Proposals, Brussels, 25 January 2012), http://ec.europa.eu/archives/commission_2010-2014/reding/pdf/speeches/data-protection-reform2012_en.pdf

⁴⁴ In Europe, see notably discussion on so called ‘Notice-and-Action’, and intermediary liability exemptions. Aleksandra Kuczerawy, “Intermediary Liability & Freedom of Expression: Recent Developments in the EU Notice & Action Initiative,” *Computer Law & Security Review* 31, no. 1 (February 2015): 46–56, doi:10.1016/j.clsr.2014.11.004.

Conflicts between data protection and freedom of expression in particular are mitigated through Article 85 GDPR.⁴⁵ It is remarkable, therefore, that Article 17(3)a does not refer to Article 85 GDPR. Especially so, as earlier drafts of Article 17 still contained such an explicit reference.⁴⁶ The deliberate removal of a link with Article 85 further suggests no balancing exercise is required when interpreting the exemption's applicability. The absence of a balancing exercise, as well as the exemption's open-endedness, broad scope and overall brevity are made all the more conspicuous when compared with the other four exemptions.

In light of freedom of expression and information's broad scope, it seems Article 17(3)a exempts a tremendous amount of situations from the right to erasure's applicability. Any situation where personal data has some level of publicity would in fact trigger the right to freedom of expression and information (of the 'speaker' and/or 'receiver'), even if minimally. Interpreted as such, Article 17 would not be applicable with regard to posts on social networks, newspaper articles, search engine results and any other information publicly available online. This interpretation seems to be at odds with Article 17's second paragraph – aimed at situations 'where the controller has made the personal data public'. The exemption could significantly curb the relevance of Article 17's second paragraph. Arguably, any situation where personal data is 'made public' (i.e. the focus of Art.17(2)) automatically also involves freedom of expression and/or information rights, *a priori* exempting the applicability of Art.17(1)-(2).

The only element preventing such a mechanical interpretation – i.e. exempting whenever the right to freedom of expression and information is on the table – is Article 17(3)'s opening sentence, stating that it applies "to the extent the processing is necessary" for the exercise of the right to freedom of expression and information. This would mean, that in order to benefit from the exemption in Article 17(3)a, the controller will need to demonstrate the extent to which further processing is necessary to exercise the right to freedom of expression and information. This choice of words highlights the need for granularity in assessing the reach and implementation of the exemption.

It is clear that the intention behind the first exemption to the right to erasure is prevention of abuse of the right to erasure in order to restrict access to legitimate expression. Yet, the intuitive understanding of the rationale of the Art.17(3)a may not necessarily find a confirmation in a legalistic reading of the provision. It is far from clear whether situations with a clear moral standard in favour of removing personal data – e.g. the full name of a rape-victim on a gossip-site – are still covered by the exemption or not, making it harder for grieved individuals to find relief. Of course, such an individual is still protected by the GDPR as a whole, as well as Articles 7 and 8 in the Charter

⁴⁵ Designed to 'reconcile the right to the protection of personal data pursuant to this Regulation with the right to freedom of expression and information', with an emphasis on processing for 'journalistic, purposes and the purposes of academic, artistic or literary expression' (*supra*). Also see Recital 153

⁴⁶ See for example amendment 148 in: Jan Philipp Albrecht, "Draft Report on the Proposal for a Regulation of the European Parliament and of the Council on the Protection of Individual with Regard to the Processing of Personal Data and on the Free Movement of Such Data (General Data Protection Regulation)" (Brussels: European Parliament (Committee on Civil Liberties, Justice and Home Affairs), December 17, 2012) Amendment 148.

and other legal frameworks aimed at preventing violation of individuals' rights. Nevertheless, implementing the new right and achieving its function might be problematic as a result of the described lack of clarity. Given the novelty of Article 17, it would be beneficial if such interpretative guidance (or specific criteria) was provided on the exemption in paragraph 3(a). **It is recommended, therefore, to provide such interpretative guidance to ensure successful (and balanced) implementation of the right to erasure (right to be forgotten). Such guidance could be provided by the European Data Protection Board (which will replace the Article 29 Working Party).**

5.3.2 Intermediary liability

REVEAL platform facilitates interaction between content creators and end-users (e.g. journalists). For this reason the project had to pay attention to the EU intermediary liability regime.⁴⁷ The conducted research on this topic allowed developing a platform that is compliant with the existing regulation. In addition, the findings from the research allow identifying certain problems posed by the current legal framework.

5.3.2.1 Review process

In the European Union the question of intermediary liability is regulated in the E-Commerce Directive 2000/31/EC.⁴⁸ In 2010, the European Commission started the process of reviewing the E-Commerce Directive by launching a public consultation as part of its periodic review. Most respondents to the consultation agreed that there was no need for a revision of the E-Commerce Directive as a whole.⁴⁹ Many stakeholders, however, emphasised that certain aspects of the directive would benefit from further clarification, particularly with regard to intermediaries' liability for third-party content. In June 2012, the European Commission launched a second public consultation, dedicated entirely to Notice and Action procedures applicable to hosting service providers.⁵⁰ A more in depth analysis of the identified issues was further conducted by the European Commission in their Staff Working Document on Online Services.⁵¹ In May 2015, the Commission announced in the Communication on a Digital Single Market Strategy for Europe

⁴⁷ For more detailed analysis of the intermediary liability issues in REVEAL see deliverable D1.2a- Legal /regulatory requirements analysis – Intermediary Liability.

⁴⁸ Directive 2000/31/EC of the European Parliament and the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on Electronic Commerce), O.J. 17 July 2000, L 178/1-16.

⁴⁹ Summary of the results of the Public Consultation on the future of electronic commerce in the Internal Market and the implementation of the Directive on electronic commerce (2000/31/EC), available at: http://ec.europa.eu/internal_market/consultations/docs/2010/e-commerce/summary_report_en.pdf.

⁵⁰ European Commission, Commission Communication to the European Parliament, The Council, The Economic and Social Committee and The Committee of Regions, "A coherent framework for building trust in the Digital Single Market for e-commerce and online services", SEC(2011) 1640 final, p. 13, ft. 49, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0942:FIN:EN:PDF>.

⁵¹ Commission Staff Working Document Online services, including e-commerce, in the Single Market, Brussels, 11.1.2012 SEC(2011) 1641 final. For a more comprehensive discussion of these documents see Kuczerawy A., Intermediary Liability & Freedom of expression: Recent developments in the EU Notice & Action Initiative, Computer Law and Security Review 2015, vol. 31, Issue 1, 46-56.

(DSM) a plan to assess the role of online platforms.⁵² Another public consultation was initiated in September 2015 to gather evidence and views on the regulatory environment for platforms, liability of intermediaries, data and cloud and collaborative economy.⁵³ The consultation led a conclusion that the Commission would maintain the existing intermediary liability regime while implementing a sectorial, problem-driven approach to regulation.⁵⁴ The Commission has started implementing this approach by introducing amendments or new legislation in different regulatory areas. In 2016 that included a proposal for a Directive amending the Audiovisual Media Services Directive, and a proposal for a Directive on copyright in the Digital Single Market.⁵⁵ Moreover, the Commission introduced soft law initiatives, such as the EU Internet Forum against Terrorism and the Code of Conduct on Countering Illegal Hate Speech Online.⁵⁶

5.3.2.2 Private enforcement

The intermediary liability regime of the E-Commerce Directive has been criticised almost since the day it was introduced. Especially the fallacies of the hosting regime were analysed extensively.

One of the most problematic issues that stakeholders generally agree upon, is a lack of clarity of the current hosting regime. Burdening intermediaries with a task of assessing the legitimacy of a complaint and the character of the content has frequently been called unfair.⁵⁷ This is, because

⁵² European Commission, Commission Communication to the European Parliament, The Council, The Economic and Social Committee and The Committee of Regions, “Online Platforms and the Digital Single Market Opportunities and Challenges for Europe”, Brussels, 25.5.2016

COM(2016) 288 final, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0288&from=EN> .

⁵³ See Full report on the results of the public consultation on the Regulatory environment for Platforms, Online Intermediaries and the Collaborative Economy: [Online Platforms Public Consultation Synopsis Report](#)

⁵⁴ European Commission, Commission Communication to the European Parliament, The Council, The Economic and Social Committee and The Committee of Regions, “Online Platforms and the Digital Single Market Opportunities and Challenges for Europe”, Brussels, 25.5.2016

COM(2016) 288 final, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0288&from=EN> .

⁵⁵ See Proposal for a Directive of the European Parliament and of the Council amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services in view of changing market realities, Brussels, 25.5.2016 , COM/2016/0287 final - 2016/0151 (COD), <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1464618463840&uri=COM:2016:287:FIN>; Proposal for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market, Brussels, 14.9.2016, COM(2016) 593 final - 2016/0280 (COD), <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016PC0593>.

⁵⁶ See the EU Internet Forum against Terrorism: Bringing together governments, Europol and technology companies to counter terrorist content and hate speech online, Brussels, 3 December 2015, http://europa.eu/rapid/press-release_IP-15-6243_en.htm; Code of Conduct on Countering Illegal Hate Speech Online, http://ec.europa.eu/justice/fundamental-rights/files/hate_speech_code_of_conduct_en.pdf;

⁵⁷ Lievens E., Protecting Children in the Digital Era e the Use of Alternative Regulatory Instruments. Martinus Nijhoff Publishers, International Studies in Human Rights, Leiden, 2010, p. 360 (with reference Montero E., ‘La responsabilité des prestataires intermédiaires sur les réseaux’, in: Montero E. (ed.), Le commerce électronique européen sur les rails?, Cahiers du CRID, Brussel, Bruylant, 2001, 289e290).

private companies often do not possess enough legal knowledge to evaluate the (il)legality of third party content, especially, where the content is not manifestly illegal. This situation could occur, for example, where the subjective rights of individuals are at stake.⁵⁸

Moreover, the internet intermediary liability regime of Directive 2000/31/EC places hosting providers in the role of gatekeepers. By providing an incentive in a form of a liability exemption, the EU legislature has ensured that hosting providers cooperate in the policing of online content. To minimize their potential liability exposure, hosting providers are generally eager to remove impugned content. Ultimately, this mechanism results in a situation when private entities are co-opted by the State to decide about matters which affect the fundamental human right to freedom of expression. Enlisting private companies to decide upon fundamental rights is obviously problematic.⁵⁹

A process whereby a private party, and possibly future defendant, decides arbitrarily whether content should be removed or blocked can lead to a violation of the right to freedom of expression, as enshrined in article 10 ECHR⁶⁰ and article 11 of the Charter of Fundamental Rights of the European Union.⁶¹ Concerns about a possible ‘chilling effect’ on the freedom of expression were expressed by a number of organisations.⁶² The Council of Europe, for example, has recently appointed a committee of experts to look closer into this issue.⁶³ The notice-and-take-down

⁵⁸ Barcelo R. J. and Koelman, K., I.c.; Barcelo R. J., On-line intermediary liability issues: comparing EU and US legal frameworks, Electronic Commerce Legal Issues Platform, Deliverable 2.1.4bis, 16 December 1999, p. 13e17, available at: www.qlinks.net/lab991216/liability.doc; The Organization for Security and Co-Operation in Europe and Reporters Sans Frontiers, Joint declaration on guaranteeing media freedom on the Internet, 17e18.06.2005, available at: <http://www.osce.org/fom/15657>.

⁵⁹ Council of Europe (Council of Ministers), Declaration on freedom of communications on the Internet, 28.05.2003, p. 11, available at: <https://wcd.coe.int/ViewDoc.jsp?id=37031>.

⁶⁰ Council of Europe, Convention for the Protection of Human Rights and Fundamental Freedoms, CETS No. 005, 04.11.1950, Rome, available at: <http://conventions.coe.int/Treaty/en/Treaties/Html/005.htm>.

⁶¹ Charter of Fundamental Rights of the European Union, 2000/C364/1, 18.12.2000, available at: http://www.europarl.europa.eu/charter/pdf/text_en.pdf.

⁶² Council of Europe, Human rights guidelines for Internet Service Providers e Developed by the Council of Europe in co-operation with the European Internet Service Providers Association (Euro-ISPA), July 2008, paras 16, 21 and 24, available at: [http://www.coe.int/t/dghl/standardsetting/media/Doc/H-Inf\(2008\)009_en.pdf](http://www.coe.int/t/dghl/standardsetting/media/Doc/H-Inf(2008)009_en.pdf); C. Wong, J.X. Dempsey, Mapping Digital Media: The Media and Liability for Content on the Internet, Open Society Foundation, Reference Series No.12, 2011, p.16.

⁶³ Council of Europe, Committee of experts on Internet Intermediaries (MSI-NET). The task of the group is to prepare a draft recommendation by the Committee of Ministers on Internet intermediaries and the preparation of a study on human rights dimensions of automated data processing techniques (in particular algorithms) and possible regulatory implications. See more: <https://www.coe.int/en/web/freedom-expression/committee-of-experts-on-internet-intermediaries-msi-net->

mechanism moreover appears to be at odds with the principles of proportionality and due process.⁶⁴

At the EU level, no guidelines were put forth concerning the implementation of notice-and-take down. The introduction of the actual procedures was left entirely to the discretion of the Member States. Recital 46 of the E-Commerce Directive explicitly confirms that the removal or disabling of access should be undertaken in observance of the right to freedom of expression and procedures established for this purpose at national level. In its article 16 and recital 40 the Directive encourages self-regulation in this field. Since the majority of the Member States chose for a verbatim transposition of the Directive, the matter was mostly left to self-regulation.⁶⁵ However, since most Member States never introduced any such measures, this self-regulatory system proved to be insufficient. The result is a lack of any firm safeguards for freedom of expression in the process of online content removal in many jurisdictions.⁶⁶

5.3.2.3 Positive obligation to protect?⁶⁷

Freedom of expression is enshrined in both the European Convention of Human Rights (art. 10) and the Charter of the Fundamental Rights of the EU (art. 11). Under the European Convention of Human Rights (ECHR), States must not only refrain from interfering with the rights (negative obligation), but also protect them (positive obligation) from interference by others. In its jurisprudence, the European Court of Human Rights has confirmed that States' have a positive obligation to ensure effective enjoyment of the right to freedom of expression (for example in *VgT v. Switzerland*⁶⁸; *Özgür Gündem v. Turkey*⁶⁹ and *Dink v. Turkey*⁷⁰). According to the doctrine of positive obligations, the State has a duty to act (e.g. by adopting legislation) to ensure that the rights can be effectively exercised. The ECHR, however, applies only to the signatories to the Convention. Since the EU is not (yet) a signatory to the ECHR, the ultimate framework for assessing the fundamental rights obligations of EU institutions is not the ECHR but the Charter of Fundamental Rights.

⁶⁴ Horten M., *The Copyright Enforcement Enigma e Internet Politics and the 'Telecoms Package'*, Palgrave Macmillan, 22 Nov 2011, p. 48-50.

⁶⁵ Verbiest T. et al., *Study on the Liability of Internet Intermediaries*, commissioned by the European Commission, 12 November 2007, p. 14-16, available at: http://ec.europa.eu/internal_market/e-commerce/docs/study/liability/final_report_en.pdf.

⁶⁶ European Commission, "Online Services, Including e-commerce in Single Market", Commission Staff Working Paper, SEC(2011) 1641 final, p. 43-47, available at http://ec.europa.eu/internal_market/e-commerce/docs/communication2012/SEC2011_1641_en.pdf.

⁶⁷ This section is based on a blog post by A. Kuczerawy, *The Code of Conduct on Online Hate Speech: an example of state interference by proxy?*, 20.7.2016, <https://www.law.kuleuven.be/citip/blog/the-code-of-conduct-on-online-hate-speech-an-example-of-state-interference-by-proxy/>.

⁶⁸ ECtHR, *Verein gegen Tierfabriken Schweiz (VgT) v. Switzerland*, 28 June 2001.

⁶⁹ ECtHR, *Özgür Gündem v. Turkey*, 16 March 2000.

⁷⁰ ECtHR, *Dink v. Turkey*, nos. 2668/07, 6102/08, 30079/08, 7072/09 and 7124/09, 14 September 2010

According to art. 51.1 of the Charter, both EU institutions and Member States, must respect the rights, observe the principles, and promote both. In art. 52.3 it is clarified that the meaning and the scope of the rights protected by both the ECHR and CFEU should be the same. Arguably, this would imply that the doctrine of positive obligations, which has been developed through the jurisprudence of the Court of Human Rights, is also relevant when interpreting the scope of protection offered by the Charter. The role of positive obligations under the Charter is, however, much less developed than under the ECHR. The CJEU has yet to refer explicitly to the doctrine of positive obligation. It has, however, relied extensively on the concept of **effective protection**, which together with the principle of proportionality and fair balancing of rights can lead to a similar outcome (see for example *Promusicae*⁷¹ and *Coty Germany*⁷²).

Effective protection of fundamental rights can take form of introducing adequate safeguards. A lack thereof could give rise to excessive interference with a right, as was declared by the CJEU in *Digital Rights Ireland*.⁷³ This case, however, was framed as a failure of the legislature to respect the fundamental right (negative obligation) to privacy and data protection. The main difference when distinguishing between negative and positive obligations is whether the interference was by the state or by a private entity. In the second scenario, the role of the legislator in the interference is relevant.

The problem becomes apparent when analysing the current legislation in the EU in the area of intermediary liability. Under the E-Commerce Directive and the laws implementing the act on the national levels Internet intermediaries are in a position to decide which content can remain online and which should be removed. They may be considered as gatekeepers, who are able to regulate the behaviour (and speech) of their users. By providing conditional liability exemptions for third parties' illegal content or activities the States enlist the intermediaries to enforce the public policy objectives. As a result, the intermediaries are incentivized to remove content from their platforms without the proper balancing of rights at stake. Such indirect responsabilization can be explained by the practicality and efficiency purposes. It nevertheless creates a situation where the States provide an incentive and allow for interference with the freedom of expression of the Internet users by private entities. It is therefore a question of the role of the legislator indirectly contributing to the interference by private individuals – a type of “state interference by proxy”.

⁷¹ CJEU, *Productores de Música de España (Promusicae) v. T elefónica de España SAU*, Case C 275/06, 29 January 2008
<http://curia.europa.eu/juris/document/document.jsf?text=&docid=70107&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=187272>

⁷² CJEU, *Coty Germany GmbH v. Stadtsparkasse Magdeburg*, Case C-580/13, 16 July 2015
<http://curia.europa.eu/juris/document/document.jsf?text=&docid=165900&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=8509>

⁷³ CJEU, *Digital Rights Ireland Ltd and Seitlinger and others*, Joined Cases C 293/12 and C 594/12, 8 April 2014
<http://curia.europa.eu/juris/document/document.jsf?text=&docid=153045&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=189863>

Code of Conduct on Countering Illegal Hate Speech Online is another problematic example. The Code has been announced by the European Commission In May 2016.⁷⁴ The initiative was launched in cooperation with a select number of IT companies, such as Facebook, YouTube (Google), Twitter and Microsoft, united under the banner of the “EU Internet Forum”.⁷⁵ In the Code of Conduct, IT companies commit themselves to:

- “take the lead” on countering the spread of illegal hate speech online;
- have in place clear and effective processes to review notifications regarding illegal hate speech on their services so they can remove or disable access to such content;
- provide Rules or Community Guidelines clarifying that they prohibit the promotion of incitement to violence and hateful conduct;
- review such requests against their rules and community guidelines and where necessary national laws upon receipt of a valid removal notification;
- review the majority of valid notifications for removal of illegal hate speech in less than 24 hours and remove or disable access to such content, if necessary.

The Code was criticised immediately by civil society organisations.⁷⁶ Main points of criticism refer to the overly broad definition of “hate speech”, the delegation of enforcement activities from state to private companies, the risk of excessive interference with the right to freedom of expression, the elevation of terms and conditions above the law, and a lack compliance with the principles of legality, proportionality, and due process.

The Code goes even further than the limited liability regime in the E-Commerce Directive. Strictly speaking, any interference with freedom of expression resulting from the implementation of the Code cannot be attributed directly to the Commission (as the restrictions will be administered by the IT companies). Nevertheless, it is clear that the Commission’s role is more than that of a facilitator. The Commission is no longer merely incentivizing content control by intermediaries but actively invites them to do so. By inviting private companies to restrict speech of individuals the Commission becomes an initiator of the interference with a fundamental right by private

⁷⁴ The Code of Conduct on Countering Illegal Hate Speech Online, http://ec.europa.eu/justice/fundamental-rights/files/hate_speech_code_of_conduct_en.pdf;

⁷⁵ See the EU Internet Forum against Terrorism: Bringing together governments, Europol and technology companies to counter terrorist content and hate speech online, Brussels, 3 December 2015, http://europa.eu/rapid/press-release_IP-15-6243_en.htm;

⁷⁶ See EDRI, Guide to the Code of Conduct on Hate Speech, 3 June 2016, <https://edri.org/guide-code-conduct-hate-speech/>; Article 19, EU: European Commission’s Code of conduct for Countering Illegal Hate Speech Online and the Framework Decision – legal analysis, June 2016, <https://www.article19.org/data/files/medialibrary/38430/EU-Code-of-conduct-analysis-FINAL.pdf>; Index on Censorship, EU agreement with tech firms on hate speech guaranteed to stifle free expression, 31 May 2016, <https://www.indexoncensorship.org/2016/05/eu-agreement-tech-firms-hate-speech-guaranteed-stifle-free-expression/>.

individuals. The triggering role of the Commission is confirmed by the statements urging the IT companies to act faster to tackle online hate speech or face laws forcing them to do so.⁷⁷

5.3.2.4 The need for appropriate safeguards⁷⁸

Whether or not the Charter of fundamental rights imposes a positive obligation to protect the right to freedom of expression is open for a debate. On the one hand, the Lisbon Treaty and the Charter did not create new competences in the area of fundamental rights. On the other hand, it is clear that EU institutions must comply with the Charter when undertaking regulating action. As a result, States and EU institutions should not only refrain from interfering with fundamental rights (unless the conditions for restriction are fulfilled) but should also effectively protect them – especially, where the interference is initiated by an EU institution. It is disputable whether an EU initiative which stimulates private companies to restrict freedom of expression of individuals without providing any safeguards for that right would stand scrutiny under the Charter. As evidenced by *Digital Rights Ireland*, the CJEU is not shying away from invalidating EU acts that disproportionately interfere with the Charter rights. The EU may want to enlist private entities to help (at least to some extent) with online content control, for the purpose of efficiency. **It is recommended, however, to equip such an “arrangement” with appropriate safeguards for freedom of expression.**

5.3.2.5 Ancillary copyright

In September 2016 the European Commission announced a proposal for a new directive on copyright in the Digital Single Market.⁷⁹ The proposal is an attempt to modernise the EU copyright rules to fit the digital age.⁸⁰ The proposal has a number of key objectives. First of all, the goal is to increase the availability of creating works across Europe and provide new distribution channels for creators.⁸¹ Secondly, the proposal intends to update the rules applicable to key exceptions and limitations in the areas of education, research and preservation of cultural heritage, mainly focusing

⁷⁷ See European Commission, Fighting illegal online hate speech: first assessment of the new code of conduct, 6.12.2016, http://ec.europa.eu/newsroom/just/item-detail.cfm?item_id=50840. See also, F. Yun Che, EU urges U.S. tech giants to act faster against hate speech, 4.12.2016, <http://www.reuters.com/article/us-eu-hate-speech-idUSKBN13TOXI>.

⁷⁸ This section is based on a blog post by A. Kuczerawy, The Code of Conduct on Online Hate Speech: an example of state interference by proxy?, 20.7.2016, <https://www.law.kuleuven.be/citip/blog/the-code-of-conduct-on-online-hate-speech-an-example-of-state-interference-by-proxy/>.

⁷⁹ Proposal for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market, Brussels, 14.9.2016, COM(2016) 593 final - 2016/0280 (COD), <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016PC0593>.

⁸⁰ See European Commission, Communication from the Commission to the European Parliament, The Council, The Economic and Social Committee and The Committee of Regions, Towards a modern, more European copyright framework, Brussels, 9.12.2015, COM(2015) 626 final, <https://ec.europa.eu/digital-single-market/en/news/towards-modern-more-european-copyright-framework-commission-takes-first-steps-and-sets-out-its>.

⁸¹ European Commission, Modernisation of the EU copyright rules, <https://ec.europa.eu/digital-single-market/en/modernisation-eu-copyright-rules>.

on digital and cross-border uses.⁸² The proposal also aims at creating a fairer market place for online content especially for press publications, online platforms and remuneration of authors and performers.⁸³ The last goal is to be achieved by an introduction (in article 11) of a new 20-year neighbouring right, also called “ancillary copyright”, to protect press publications concerning digital uses. The provision reinforces position of right holders to negotiate and be remunerated for the online exploitation of their content of video-sharing platforms. In fact, it introduces a right for publishers of news publications to authorise and charge for the online use of their news publications, possibly even for mere indexing of such content.⁸⁴ If this appears to be the case, platforms or application such as REVEAL could face a serious threat to their existence. This approach has been criticized extensively for putting small publishers at risk.⁸⁵ This is because small publishers, without established names, depend on platforms such as Google News to attract their readers. Analogies are drawn to the similar, and failed, initiatives in Germany and Spain.⁸⁶ In the former country Google responded by stopping to reproduce snippets of text in Google News, which forced the publishers to grant them a free licence to prevent decline of the online traffic. In Spain Google pulled out Google News entirely. **It is recommended, therefore, to carefully consider any possible implications of such a new right.**

5.3.2.6 Monitoring obligations⁸⁷

The proposed copyright directive contains another provision that is worth analysing. Article 13 of this proposal requires providers of intermediary services, which consist of the storage and provision of public access to large amounts of works or other subject-matter uploaded by their users, to put in place measures to “prevent the availability on their services of works or other subject-matter identified by rightholders” such as the use of “effective content recognition technologies.” In other words, article 13 of the proposal envisages a general monitoring obligation incumbent upon a great number of providers of intermediary services.

The E-Commerce Directive, however, prohibits the imposition of general monitoring obligations in article 15.⁸⁸ The prohibition of general monitoring obligations serves two central objectives: 1) the

⁸² European Commission, Modernisation of the EU copyright rules, <https://ec.europa.eu/digital-single-market/en/modernisation-eu-copyright-rules>.

⁸³ European Commission, Modernisation of the EU copyright rules, <https://ec.europa.eu/digital-single-market/en/modernisation-eu-copyright-rules>

⁸⁴ The IPKat, Super Kat-Exclusive: Here's draft Directive on copyright in the Digital Single Market, 31 August 2016, <http://ipkitten.blogspot.be/2016/08/super-kat-exclusive-heres-draft.html>.

⁸⁵ R. Chavannes, A neighbouring right for press publishers – the wrong solution to a serious problem, 13.6.2016, <http://kluwercopyrightblog.com/2016/06/13/neighbouring-right-press-publishers-wrong-solution-serious-problem/>.

⁸⁶ D. Meyer, Why Europe's New Copyright Proposals Are Bad News for the Internet, 14.9.2016, <http://fortune.com/2016/09/14/europe-copyright-google/>.

⁸⁷ This section is based on a blog post by A. Kuczerawy, Dear European Commission – academics express concern about monitoring obligations in the proposed Copyright Directive, 1.12.2016, <https://www.law.kuleuven.be/citip/blog/dear-european-commission-academics-express-concern-about-monitoring-obligations-in-the-proposed-copyright-directive/>.

encouragement of innovation, which is essential for the flourishing of the Digital Single Market and 2) the protection of fundamental rights of all Internet users and, in particular, the rights enshrined in the EU Charter of Fundamental Rights.

The obligation introduced in article 13 of the proposed copyright directive is not a special monitoring obligation but a general monitoring obligation as it requires the monitoring of the activities of all users. As it stands, article 13 contradicts article 15 of the E-Commerce Directive. It also goes against the CJEU's reasoning in *Scarlet v Sabam* and *Sabam v Netlog*.⁸⁹

The proposal provides additional clarification to the provision of article 13 in recital 38. Unfortunately, the offered clarification only adds to the confusion. Recital 38 appears to suggest that *information society service providers that store and provide access to the public to copyright protected works or other subject-matter uploaded by their users* should not be considered intermediary providers (and thereby hosting providers) for the purposes of article 14 of the E-Commerce Directive since they are not, as a matter of principle, passive providers. Such approach, however, would be at odds with the CJEU's reasoning in *Google France*, where the Court ruled that referencing service providers should be considered hosting providers for the purposes of article 14 of the E-commerce Directive unless they are not passive.⁹⁰

The provision regarding monitoring of online content is the most criticized element of the proposed directive.⁹¹ The commentators pointed out that the recent developments by the Commission undermine the consistency and integrity of the EU acquis in the field of content monitoring within Information Society.⁹² They expressed concern whether article 13 is compatible with the Charter, especially in relation to the rights to the respect for private and family life, the protection of

⁸⁸ See more on the monitoring obligations in REVEAL deliverable D1.2a - Legal /regulatory requirements analysis – Intermediary Liability.

⁸⁹ CJEU, *Scarlet Extended SA v. Société belge des auteurs, compositeurs et éditeurs SCRL (SABAM)*, C 70/10, 24 November 2011 and CJEU, *Belgische Vereniging van Auteurs, Componisten en Uitgevers CVBA (SABAM) v. Netlog NV*, Case C 360/10, 16 February 2012.

⁹⁰ CJEU, *Google France and Google v. Louis Vuitton Malletier a.o.*, Joined Cases C-236/08 to C-238/08, 23 March 2010.

⁹¹ See for example: A. Kuczerawy, Dear European Commission – academics express concern about monitoring obligations in the proposed Copyright Directive, 1 December 2016, <https://www.law.kuleuven.be/citip/blog/dear-european-commission-academics-express-concern-about-monitoring-obligations-in-the-proposed-copyright-directive/>; S. Stalla-Bourdillon et al., Open Letter to the European Commission - On the Importance of Preserving the Consistency and Integrity of the EU Acquis Relating to Content Monitoring within the Information Society, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2850483; S. Stalla-Bourdillon et al., A Brief Exegesis of the Proposed Copyright Directive, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2875296.

⁹² A. Kuczerawy, Dear European Commission – academics express concern about monitoring obligations in the proposed Copyright Directive, 1 December 2016, <https://www.law.kuleuven.be/citip/blog/dear-european-commission-academics-express-concern-about-monitoring-obligations-in-the-proposed-copyright-directive/>;

personal data, and freedom of expression and information.⁹³ Moreover, it is questionable if this provision complies with the requirement of proportionality, which is a core principle of EU law.⁹⁴

The relationship between the E-Commerce Directive and the proposed Copyright Directive is not at all clear. The Commission has previously announced that it would not amend or re-open debate on the E-Commerce Directive.⁹⁵ For this reason, **it is recommended to hold an open public discussion on the interplay between the proposed copyright Directive and the E-commerce Directive.** Especially, the discussion should address the importance of and impact on articles 14 and 15 of the E-Commerce Directive. In addition, **it is recommended to maintain the prohibition of general monitoring obligation,** as it is a key safeguard against violations of all Internet users' human rights.⁹⁶

5.3.3 Media law and freedom of expression

The media law aspects were relevant for the journalistic scenario in REVEAL. This area was addressed in the last legal deliverable in the project D1.2c – Media Law and Freedom of Expression.⁹⁷ Research conducted in the project provides a background to look closer at certain recent development in the area of media law.

5.3.3.1 Review of the AVMS Directive

In May 2016 the European Commission adopted a new legislative proposal amending the AVMS Directive 2010/13/EU.⁹⁸ The goals of the proposal include:

⁹³ S. Stalla-Bourdillon et al., Open Letter to the European Commission - On the Importance of Preserving the Consistency and Integrity of the EU Acquis Relating to Content Monitoring within the Information Society, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2850483; S. Stalla-Bourdillon et al., A Brief Exegesis of the Proposed Copyright Directive, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2875296.

⁹⁴ S. Stalla-Bourdillon et al., Open Letter to the European Commission - On the Importance of Preserving the Consistency and Integrity of the EU Acquis Relating to Content Monitoring within the Information Society, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2850483; S. Stalla-Bourdillon et al., A Brief Exegesis of the Proposed Copyright Directive, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2875296.

⁹⁵ European Commission, Commission Communication to the European Parliament, The Council, The Economic and Social Committee and The Committee of Regions, "Online Platforms and the Digital Single Market Opportunities and Challenges for Europe", Brussels, 25.5.2016

COM(2016) 288 final, p.8, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0288&from=EN> .

⁹⁶ S. Stalla-Bourdillon et al., Open Letter to the European Commission - On the Importance of Preserving the Consistency and Integrity of the EU Acquis Relating to Content Monitoring within the Information Society, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2850483; S. Stalla-Bourdillon et al., A Brief Exegesis of the Proposed Copyright Directive, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2875296.

⁹⁷ See European Commission, Commission Communication to the European Parliament, The Council, The Economic and Social Committee and The Committee of Regions, "Online Platforms and the Digital Single Market Opportunities and Challenges for Europe", Brussels, 25.5.2016, COM(2016) 288 final, p. 8, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0288&from=EN> .

⁹⁸ See Proposal for a Directive of the European Parliament and of the Council amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the

- creating a level playing field for emerging audiovisual media
- preserving cultural diversity
- protecting children and consumers
- safeguarding media pluralism
- combating racial and religious hatred
- guaranteeing the independence of national media regulators.⁹⁹

As pointed out by the Commission, viewers, especially the young ones, are moving from traditional TV to the online world. Yet, the regulatory burden, until now, was much higher on traditional TV. The proposal introduces flexibility to remedy a situation where restrictions applied only to one type of carrier. At the same time the proposals aims to ensure sufficient protection to the consumers in the on-demand and online world.¹⁰⁰ Video-sharing platforms, according to the proposal, will be included in the scope of the AVMSD only in the context of obligations to combat hate speech and dissemination of harmful content to minors.¹⁰¹ Platforms which organise and tag a large quantity of videos will be under obligation to protect minors from harmful content. Moreover, they will have to protect all citizens from incitement to hatred, based on new EU-specific terms in the revised AVMSD.¹⁰²

5.3.3.2 Independence of national media regulators¹⁰³

According to the European Commission, the independence of audiovisual regulators would be enshrined into EU law by ensuring that they are legally distinct and functionally independent from the industry and government (eg. they do not seek nor take instructions).¹⁰⁴ Moreover, the aim of the proposal was to ensure that they have sufficient powers and operate in a transparent and accountable manner.¹⁰⁵ To achieve these goals, the European Commission proposed a significant

provision of audiovisual media services in view of changing market realities, Brussels, 25.5.2016 , COM/2016/0287 final - 2016/0151 (COD), <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1464618463840&uri=COM:2016:287:FIN>

⁹⁹ European Commission, Audiovisual Media Services Directive (AVMSD), <https://ec.europa.eu/digital-single-market/en/audiovisual-media-services-directive-avmsd>.

¹⁰⁰ European Commission, Revision of the Audiovisual Media Services Directive (AVMSD), <https://ec.europa.eu/digital-single-market/en/revision-audiovisual-media-services-directive-avmsd>.

¹⁰¹ European Commission, Revision of the Audiovisual Media Services Directive (AVMSD), <https://ec.europa.eu/digital-single-market/en/revision-audiovisual-media-services-directive-avmsd>.

¹⁰² European Commission, Revision of the Audiovisual Media Services Directive (AVMSD), <https://ec.europa.eu/digital-single-market/en/revision-audiovisual-media-services-directive-avmsd>.

¹⁰³ This section is based on a blog post by P. Valcke, AVMS Review and Media Regulator's Independence: The Dancing Procession of Echternach? 22.9.2016, <https://www.law.kuleuven.be/citip/blog/avms-review-and-media-regulators-independence-the-dancing-procession-of-echternach/>.

¹⁰⁴ European Commission, Revision of the Audiovisual Media Services Directive (AVMSD), <https://ec.europa.eu/digital-single-market/en/revision-audiovisual-media-services-directive-avmsd>.

¹⁰⁵ European Commission, Revision of the Audiovisual Media Services Directive (AVMSD), <https://ec.europa.eu/digital-single-market/en/revision-audiovisual-media-services-directive-avmsd>.

change to the current Article 30, which refers to media regulators. The proposal introduces a clear obligation for Member States to guarantee the independence of their media regulators (and establish one if they do not have one yet) and it specifies a number of independence requirements (such as with regard to the regulator's enforcement powers, adequate financial and human resources, the dismissal of its head or the right to appeal).¹⁰⁶ The Commission also proposed to introduce a new Article 30a that will provide (instead of the Commission's Decision of February 3, 2014¹⁰⁷) the legal ground for the establishment of the European Regulators Group for Audiovisual Media Services, in short 'ERGA'.¹⁰⁸ Article 30a lists ERGA's tasks – including to advise and assist the Commission, to cooperate and exchange information, and to give opinions when requested by the Commission.

However, in the recently published draft report of the Committee on Culture and Education (CULT) in the European Parliament, the authors seem to suggest significant weakening of the proposed text of Articles 30 and 30a.¹⁰⁹ For instance:

- The term “national regulatory authority” is systematically replaced by the term “national regulatory body” (suggesting the connotation of weaker powers and deviating from the terminology used in electronic communications, energy, etc.).

¹⁰⁶ Those requirements correspond to a large extent with “essential characteristics” of independent regulatory bodies as identified in the INDIREG study (2011), which identified a set of indicators to measure formal and operational independence of media regulators and developed a ranking tool to self-assess the risk of influence by external players, see: <http://www.indireg.eu/>. Also the AVMS-RADAR report of 2015 (the follow-up study to INDIREG) pointed to a number of cases where the independence of regulators is at risk, see: <https://ec.europa.eu/digital-single-market/news/study-audiovisual-media-services>. See also ERGA Report on the independence of National Regulatory Authorities of December 15, 2015, <https://ec.europa.eu/digital-single-market/en/news/erga-report-independence-national-regulatory-authorities>.

¹⁰⁷ European Commission, Commission Decision on establishing the European Regulators Group for Audiovisual Media Services, <https://ec.europa.eu/digital-single-market/en/news/commission-decision-establishing-european-regulators-group-audiovisual-media-services>.

¹⁰⁸ European Commission, ERGA - Audiovisual Regulators, <https://ec.europa.eu/digital-single-market/avmsd-audiovisual-regulators>.

¹⁰⁹ See S. Verheyen, P. Kammerevert, Draft report on the proposal for a directive of the European Parliament and of the Council amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services in view of changing market realities, European Parliament, Committee on Culture and Education, 2016/0151(COD), 5.9.2016, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-%2f%2fEP%2f%2fNONGML%2bCOMPARL%2bPE-587.655%2b02%2bDOC%2bPDF%2bV0%2f%2fEN>. For more information on the works of the CULT Committee in general see <http://www.europarl.europa.eu/committees/en/cult/home.html> and on the works of the CULT Committee on the topic of 'Audiovisual media services: changing market realities' see: [http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=&reference=2016/0151\(COD\)](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=&reference=2016/0151(COD)). See for the file with the draft report and accompanying amendments: <http://www.europarl.europa.eu/committees/en/cult/search-in-documents.html?ufolderComCode=CULT&ufolderLegid=8&ufolderId=06764&linkedDocument=true&urefProcYear=&urefProcNum=&urefProcCode=#sidesForm>.

- It is proposed to delete the requirement that media regulators should be “legally distinct” of any other public or private body.
- It is proposed that the media regulators’ duties shall be limited to “*monitoring the provisions of this Directive, of national law and the fulfilment of statutory obligations*” (which could be a problem for countries with so-called converged regulators who also have duties in relation to electronic communications).
- It is proposed to delete the requirement that a Head or a member of the collegiate body of a media regulator may only be dismissed if they no longer fulfil the conditions required for the performance of their duties (and not simply because of some omissions in the annual activity report).
- The tasks of ERGA are seriously curtailed: the provisions on advising and assisting the Commission will be deleted in Article 30a, paragraph 1, and ERGA will merely get the task to “draft” opinions when requested by the Commission, whereas the Contact Committee will be entrusted with the competence to deliver opinions (thereby giving the Member States through the Contact Committee the final word over the regulators’ professional independent opinion; Article 29f). Moreover, it is proposed that four Members of the European Parliament will be nominated as members of the Contact Committee.

Very little explanation is given for these amendments, apart from the statement that “[t]he Rapporteurs appreciate the contribution of ERGA as an informative and consultative body. They consider however that to safeguard the prerogatives of Member States, it should not have any decision-making powers. More competences should be instead given to the contact committee, established in Article 29 of the current Directive (Am.106). The contact committee should be solely competent to make decisions, including on opinions drafted by ERGA.”¹¹⁰

The amendments proposed by the CULT Committee do not seem to be in line with the EU legislator’s intention to ensure independent and professional oversight of media markets. They are not in line with best practices and rules adopted by the EU legislator in other sectors (in particular, the closely related electronic communications sector). They disregard the international standards developed by the Council of Europe¹¹¹ and the European Court of Human Rights under article 10 (in

¹¹⁰ S. Verheyen, P. Kammerevert, Draft report on the proposal for a directive of the European Parliament and of the Council amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services in view of changing market realities, European Parliament, Committee on Culture and Education, 2016/0151(COD), 5.9.2016, p. 74, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-%2f%2fEP%2f%2fNONGML%2bCOMPARL%2bPE-587.655%2b02%2bDOC%2bPDF%2bV0%2f%2fEN>.

¹¹¹ See Council of Europe, Recommendation (2000)23 of the Committee of Ministers to Member States on the independence and functions of Regulatory Authorities for the Broadcasting Sector, <https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=090000168008eb70>; and Council of Europe, Declaration of the Committee of Ministers

relation to articles 6 and 13) of the European Convention on Human Rights. Moreover, they disregard the recommendations of the High Level Group on Media Freedom and Pluralism.¹¹² But perhaps most importantly, they contradict the European Parliament's own resolutions adopted on May 21, 2013 (Resolution on the EU Charter: standard settings for media freedom across the EU¹¹³) and March 10, 2011 (Resolution on media law in Hungary¹¹⁴). It seems surprising, at best, for the European Parliament to call *"on the Member States to establish guarantees ensuring the independence of media councils and regulatory bodies from the political influence of the government, the parliamentary majority or any other group in society"*¹¹⁵, but, at the same time, be reluctant to provide the necessary framework itself at EU level.

Today's media sector is under huge pressure. The digital transformation, the growing market power of – mostly American – video platforms and giant internet players, the rise of new technologies for big data analysis, targeted advertising and personalized media, and the increasing attempts of political intervention in the media in some EU Member States, all urge for strong and independent regulatory authorities who can exercise their powers in a professional way, at arm's length of political and economic powers (with the appropriate accountability mechanisms). The growing delivery of video content across territorial borders urges for stronger cooperation between those regulators. This creates a strong need to recognize in the directive the important role of ERGA in the implementation of the AVMS rules and empower it to become an action team and not merely a 'talk shop'.

Pursuant to article 10 ECHR and article 11 EU Charter of Fundamental Rights, it is the EU's and Member States' responsibility to provide the appropriate legal framework that is conducive, not only to formal independence, but also to a culture of independence. After all, independent media oversight is a necessary requirement for media pluralism. What the Commission proposes is nothing more than best practice standards that are in line with international standards and that are based on sound academic research. Moreover, they have been implemented through EU legislation in other sectors since years. Rejecting them would be a serious step back for the European media sector and the EU citizens alike. **It is recommended to reject the amendments proposed by the**

on the independence and functions of regulatory authorities for the broadcasting sector of March 2008, [https://wcd.coe.int/ViewDoc.jsp?p=&Ref=Decl\(26.03.2008\)&Language=lanEnglish&Ver=original&BackColorInternet=9999CC&BackColorIntranet=FFBB55&BackColorLogged=FFAC75&direct=true](https://wcd.coe.int/ViewDoc.jsp?p=&Ref=Decl(26.03.2008)&Language=lanEnglish&Ver=original&BackColorInternet=9999CC&BackColorIntranet=FFBB55&BackColorLogged=FFAC75&direct=true).

¹¹² See European Commission, High-Level Group on Media Freedom and Pluralism, <https://ec.europa.eu/digital-single-market/en/high-level-group-media-freedom-and-pluralism>.

¹¹³ European Parliament resolution of 21 May 2013 on the EU Charter: standard settings for media freedom across the EU, <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2013-0203&language=EN&ring=A7-2013-0117>.

¹¹⁴ European Parliament resolution of 10 March 2011 on media law in Hungary, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2011-0094+0+DOC+XML+V0//EN>.

¹¹⁵ European Parliament resolution of 21 May 2013 on the EU Charter: standard settings for media freedom across the EU, point: AD.2, <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2013-0203&language=EN&ring=A7-2013-0117>.

CULT Committee and to adopt the provisions of arts. 30 and 30a as proposed by the European Commission.

5.3.3.3 Filter bubbles¹¹⁶

Social media has increasingly taken on an important role within the media landscape.¹¹⁷ In the US alone, the numbers go as high as 62% of people using social media platforms to access news, at least occasionally.¹¹⁸ This evolution has given rise to many new questions, most recently as the aftermath of the US elections. Many commentators were concerned how it was possible for media and pollsters to miscalculate the results to such a great extent.¹¹⁹ Experts in the field have given a variety of answers, most of which pointing the finger to the rise of new technologies. Applications of these new technologies have caused disruptions in the media sector and on how it manages to fulfil its job as ‘watchdogs of society’. One of those disruptions was named the ‘filter bubble’.¹²⁰

The term ‘filter bubble’ was first used by Eli Pariser, who explains that more often than not computer algorithms now decide which information they will show you based on your preferences, which it can derive from previously collected (personal) data.¹²¹ Experts warn people of the effect these algorithms may have in our daily lives. The more a person has shared personal data through interactions with e.g. social media platforms or search engines, the more these algorithms will use that data to echo that person’s opinions and preferences and as such reinforce them. Such reinforcing creates a confirmation bias, making it increasingly difficult to access the plurality of opinions essential for the good functioning of a democracy.¹²² These bubbles are not limited to social media platforms, but equally apply to search engines.¹²³ Current search engines will

¹¹⁶ This section is based on a blog post by I. Lambrecht, The Filter Bubble: to burst or to blow over?, 29.11.2016, <https://www.law.kuleuven.be/citip/blog/the-filter-bubble-to-burst-or-to-blow-over/>.

¹¹⁷ K. Viner, How technology disrupted the truth, 12.7.2016, <https://www.theguardian.com/media/2016/jul/12/how-technology-disrupted-the-truth>.

¹¹⁸ J. Gottfried, E. Shearer, News Use Across Social Media Platforms 2016, <http://www.journalism.org/2016/05/26/news-use-across-social-media-platforms-2016/>.

¹¹⁹ M. M. El-Bermawy, Your Filter Bubble is Destroying Democracy, 18.11.2016, <https://www.wired.com/2016/11/filter-bubble-destroying-democracy/>.

¹²⁰ T. O’Callaghan, Breaking out of the internet filter bubble, <https://www.newscientist.com/blogs/culturelab/2011/06/why-facebook-have-an-important-button.html>.

¹²¹ See E. Pariser, Beware online “filter bubbles”, TED talk, Filmed March 2011, available at: https://www.ted.com/talks/eli_pariser_beware_online_filter_bubbles.

¹²² S. Adey, How can Facebook and its users burst the ‘filter bubble’?, 18.11.2016, <https://www.newscientist.com/article/2113246-how-can-facebook-and-its-users-burst-the-filter-bubble/>.

¹²³ M. M. El-Bermawy, Your Filter Bubble is Destroying Democracy, 18.11.2016, <https://www.wired.com/2016/11/filter-bubble-destroying-democracy/>.

automatically complete search entries with preferences and filter search results to prioritize those that are ‘most relevant to you’.¹²⁴

There exists a recurring perception about the circulation of false news and filter bubbles that the social media users are being empowered and in control, both of their access to information and of the information they share to others. According to Zuckerberg, people are now presented with differing opinions from friends and family in their feeds, far more than in the days of traditional media.¹²⁵ Moreover, he adds that: *“The content is there, you just don’t click on it, you tune it out when you see it and it does not have your world view”*.¹²⁶ The problem, however, lies in the next step of the process in which it is the algorithms that decide. Shared articles of people with a differing opinion will be gradually phased out of the news feed the less people engage with them, eventually leaving only those articles that echo people’s personal preferences.

5.3.3.4 Legal concerns regarding filter bubbles

The bubbles may have great effects on both the media sector¹²⁷ as on the democratic and electoral process¹²⁸, but they also raise legal concerns relating to fundamental rights of access to information, freedom of information, liabilities and transparency, data protection and behavioural profiling.

Policy Review has published an analysis on the effects of filter bubbles¹²⁹, of which the following references have legal relevance:

First and foremost, freedom of information and freedom of expression are in danger of being inhibited. Although the Policy Review does nuance the concerns by pointing to the absence of benchmarks, it also found that “[...] there is some evidence that 11% of Google searches differ due to [pre-selected] personalisation”.¹³⁰ The issues surrounding freedom of expression are more closely related to editorial control in these new forms of media. As algorithms are increasingly

¹²⁴ M. M. El-Bermawy, Your Filter Bubble is Destroying Democracy, 18.11.2016, <https://www.wired.com/2016/11/filter-bubble-destroying-democracy/>.

¹²⁵ M. Zuckerberg, <https://www.facebook.com/zuck/posts/10103253901916271>.

¹²⁶ M. Zuckerberg, <https://www.facebook.com/zuck/posts/10103253901916271>.

¹²⁷ R. Somaiya, How Facebook Is Changing the Way Its Users Consume Journalism, 26.10.2014, http://www.nytimes.com/2014/10/27/business/media/how-facebook-is-changing-the-way-its-users-consume-journalism.html?_r=1.

¹²⁸ K. Connolly, et al., Fake news: an insidious trend that's fast becoming a global problem, 2.12.2016, <https://www.theguardian.com/media/2016/dec/02/fake-news-facebook-us-election-around-the-world>.

¹²⁹ F. Zuiderveen Borgesius, et al. Should we worry about filter bubbles?. *Internet Policy Review*, 5(1) 2016. DOI: 10.14763/2016.1.401, <https://policyreview.info/articles/analysis/should-we-worry-about-filter-bubbles>.

¹³⁰ Hannak, A., et al. Measuring personalization of web search. In Proceedings of the 22Nd International Conference on World Wide Web (pp. 527–538) 2013. Geneva, Switzerland: International World Wide Web Conferences Steering Committee.

taking over this function, new legal questions arise on e.g. algorithmic accountability, intermediary liabilities and governmental control.¹³¹

The lack of transparency about pre-selected personalisation is problematic in the sense that regulators may find it increasingly difficult to monitor the media sector. “If people do not realise they see pre-selected content, they might think they see the same content as everybody else.”¹³² The Council of Europe hopes that transparency could help promote media diversity and information access, to limit the filter bubble effects.¹³³

Another problematic issue is that of privacy. As the filter bubble is only possible through the processing of data, including personal data and is aimed at behavioural profiling, privacy experts are trying to raise awareness on the issue.¹³⁴ These concerns include ‘social sorting and discriminatory practices’, which are often overlooked in public policy discourse according to the Policy Review.¹³⁵

5.3.3.5 Fake news

The implications of the filter bubble are manifold and people in the field have been talking about the phenomenon for a while.¹³⁶ Yet, this is a first time that a broad audience became aware that something unusual is happening.¹³⁷ Recent events, such as Brexit and the US elections, indicate that filter bubbles can be particularly worrisome as they amplify misinformation, or what became known as the fake news. It is now up to those concerned to decide how to respond. Finding a right solution, however, is not an easy task. Soon after the US elections, Pariser started an open Google document, where technologists, academics and media experts are gathering ideas.¹³⁸ When

¹³¹ See C. Cadwalladr, Google, democracy and the truth about internet search, 4.12.2016, <https://www.theguardian.com/technology/2016/dec/04/google-democracy-truth-internet-search-facebook>.

¹³² F. Zuiderveen Borgesius, et al. Should we worry about filter bubbles?. *Internet Policy Review*, 5(1). DOI: 10.14763/2016.1.401, <https://policyreview.info/articles/analysis/should-we-worry-about-filter-bubbles>.

¹³³ Council of Europe, Recommendation CM/Rec(2012)4 of the Committee of Ministers to member States on the protection of human rights with regard to social networking services, 4.4.2012, https://search.coe.int/cm/Pages/result_details.aspx?ObjectID=09000016805caa9b.

¹³⁴ See, for example, Phd of F. Zuiderveen Borgesius, ‘Improving Privacy Protection in the area of Behavioural Targeting’, Institute for Information Law (IViR), University of Amsterdam, <http://www.ivir.nl/publicaties/download/1455.pdf>.

¹³⁵ F. Zuiderveen Borgesius, et al. Should we worry about filter bubbles?. *Internet Policy Review*, 5(1). DOI: 10.14763/2016.1.401, <https://policyreview.info/articles/analysis/should-we-worry-about-filter-bubbles>.

¹³⁶ See for example, F. Pasquale, *The Black Box Society - The Secret Algorithms That Control Money and Information*, Harvard University Press Cambridge 2015.

¹³⁷ See C. Cadwalladr, Google, democracy and the truth about internet search, 4.12.2016, <https://www.theguardian.com/technology/2016/dec/04/google-democracy-truth-internet-search-facebook>.

¹³⁸ See E. Pariser et al., *Media ReDesign: The New Realities*, https://docs.google.com/document/d/1OPghC4ra6QLhaHhW8QvPJRMKGEXT7KaZtG_7s5-UQrw/preview#. For a summary see N. Woolf, How to solve Facebook's fake news problem: experts pitch their ideas, 29.11.2016, <https://www.theguardian.com/technology/2016/nov/29/facebook-fake-news-problem-experts-pitch-ideas-algorithms>.

studying the collected proposals it quickly becomes clear that the problem of fake news is extremely complex. For example, how to create a solution that would not harm proper media? How to distinguish (especially when using algorithms) between fake story and satire or a joke? And most importantly, who should do it?

Some argue that the problem should be addressed by the platform providers, such as Facebook, Twitter or Google. The question is, however, whether they have an incentive to do so.¹³⁹ After all, if this is what people want to see and to click on, to stay in their bubble and read stories that confirm their beliefs then why should platform providers stop them? In a (twisted) way it is also a form of exercising one's freedom of expression. The problem starts when people make political decisions based on fake news or take a shotgun to a local pizza joint to "self-investigate" a story.¹⁴⁰

There is of course a question of reputation of a platform. That's why Facebook recently introduced a new functionality where it asks its users to rate articles' use of 'misleading language'.¹⁴¹ Facebook did not provide additional information clarifying how the functionality works, and how the data is used and retained.¹⁴² It is an interesting approach, albeit not very transparent, since it makes its own users go after their (other? same?) users who post fake news on the platform.

But the main problem with demanding platform providers to act is that once again, as in case of hate speech, they would be given even more power to decide what is permitted content and what is not.¹⁴³ And as seen recently in a story about the picture of the Vietnam Napalm Girl, this is not working smoothly.¹⁴⁴ Once again, this becomes a problem of social media providers becoming editors and delegating decision making process on fundamental right to private entities, which can easily result in censorship.

It is possible, therefore, that we should rather look for long-term solutions to address the problem. Any short-term answer will face a risk of hindering freedom of expression. As pointed out by the OSCE Representative on Freedom of the Media, Dunja Mijatović, people lie and they always

¹³⁹ O. Solon, Facebook won't block fake news posts because it has no incentive, experts say, 15.11.2016, <https://www.theguardian.com/technology/2016/nov/15/facebook-fake-news-us-election-trump-clinton>.

¹⁴⁰ J. Gillin, How Pizzagate went from fake news to a real problem for a D.C. business, 5.12.2016, <http://www.politifact.com/truth-o-meter/article/2016/dec/05/how-pizzagate-went-fake-news-real-problem-dc-busin/>.

¹⁴¹ D. Coldewey, Facebook begins asking users to rate articles' use of 'misleading language', 6.12.2016, <https://techcrunch.com/2016/12/05/facebook-begins-asking-users-to-rate-articles-use-of-misleading-language/>.

¹⁴² D. Coldewey, Facebook begins asking users to rate articles' use of 'misleading language', 6.12.2016, <https://techcrunch.com/2016/12/05/facebook-begins-asking-users-to-rate-articles-use-of-misleading-language/>.

¹⁴³ See Infra section 3.2 – Intermediary liability. See also A. Kuczerawy, The Code of Conduct on Online Hate Speech: an example of state interference by proxy?, 20.7.2016, <https://www.law.kuleuven.be/citip/blog/the-code-of-conduct-on-online-hate-speech-an-example-of-state-interference-by-proxy/>.

¹⁴⁴ T. Solsvik, Y. Abutaleb, Facebook reinstates Vietnam photo after outcry over censorship, 9.9.2016, <http://www.reuters.com/article/us-facebook-norway-primeminister-idUSKCN11F194>.

have.¹⁴⁵ This is a reason why defamation laws exist, to hold the authors of defamatory statements accountable. Taking a stringent action, according to Mijatović, “may just cause greater harm to free expression than any lie, no matter how damaging”.¹⁴⁶ Instead, she recommends addressing the problem exclusively through self-regulation, education and literacy, and not through new restrictions.¹⁴⁷ Including digital literacy in the school programmes would be extremely beneficial. Learning about online environment could help people with tackling numerous threats such as infringements of privacy, phishing emails or spreading unverified information.

Other solution that is slowly gaining popularity is algorithmic accountability. It is based on the idea that platform such as Facebook and Google do not disclose how their algorithms work. They are, in fact, “black boxes”.¹⁴⁸ They are not, however, entirely neutral and objective but can reflect biases of their creators. Since they have a power to influence so many aspects of people’s lives, they should be transparent and accountable.¹⁴⁹

Finally, the problem will not be addressed properly without strong verification tools. A number of tools were created by developers, who wanted to show the big players such as Facebook that the problem is not impossible to tackle.¹⁵⁰ Tools such as B.S.Detector or Notim.press/ed use the similar logic as used in REVEAL. For example, B.S.Detector assesses reputation of the source¹⁵¹, while Notim.press/ed allows assessing different factors of the story (for example sentiment analysis or truthfulness).¹⁵² Interestingly, the former was initially attributed to Facebook, which appeared to be a fake story, only to be blocked by Facebook, for alleged security purposes.¹⁵³

¹⁴⁵ D. Mijatović , Dunja Mijatović: Why bother? A quick take on lying on social media, 1.12.2016, https://www.indexoncensorship.org/2016/12/dunja-bother-quick-take-lying-social-media/#.WEABpV5A_MJ.twitter.

¹⁴⁶ D. Mijatović , Dunja Mijatović: Why bother? A quick take on lying on social media, 1.12.2016, https://www.indexoncensorship.org/2016/12/dunja-bother-quick-take-lying-social-media/#.WEABpV5A_MJ.twitter.

¹⁴⁷ D. Mijatović , Dunja Mijatović: Why bother? A quick take on lying on social media, 1.12.2016, https://www.indexoncensorship.org/2016/12/dunja-bother-quick-take-lying-social-media/#.WEABpV5A_MJ.twitter.

¹⁴⁸ See more in F. Pasquale, *The Black Box Society - The Secret Algorithms That Control Money and Information*, Harvard University Press Cambridge 2015.

¹⁴⁹ See C. Cadwalladr, Google, democracy and the truth about internet search, 4.12.2016, <https://www.theguardian.com/technology/2016/dec/04/google-democracy-truth-internet-search-facebook>.

¹⁵⁰ Sullivan B., This Guy Built a Fake News Detector, Then Facebook Blocked It, 2.12.2016, <http://motherboard.vice.com/read/an-interview-with-the-guy-whose-fake-news-plugin-was-just-blocked-by-facebook>.

¹⁵¹ Sullivan B., This Guy Built a Fake News Detector, Then Facebook Blocked It, 2.12.2016, <http://motherboard.vice.com/read/an-interview-with-the-guy-whose-fake-news-plugin-was-just-blocked-by-facebook>.

¹⁵² J. Constantine, Disrupt Hackathon app Notim.press/ed algorithmically detects fake news, 3-4.12.2016, <https://techcrunch.com/2016/12/04/not-impressed/>.

¹⁵³ O. Solon, Fake news detector for Facebook leads to fake news story about who made it, 2.12.2016, <https://www.theguardian.com/technology/2016/dec/02/facebook-fake-news-flag-techcrunch-bs-detector>.

Content verification tools should not work as censorship tools but rather opt-in mechanisms to remind people that not everything they read online is true. As stated by the creator of the B.S.Detector, such tools are meant “to encourage people to be suspicious by default”.¹⁵⁴

REVEAL provides a variety of content verification tools which examine different modalities of a story. For example, the image forensics tools (e.g. Image Verification Assistant) help spotting manipulated content. Other modules (e.g. Truthnest) allow assessing reputation of the author or truthfulness of the story. They could, therefore, be used to facilitate a discovery of “original” fake content, so content that has been created from scratch. REVEAL offers many tools and metrics that could definitely be used to help addressing the situation. The problem of fake news, however, is so complex that more effort needs to be devoted to this topic. In REVEAL, we strongly recommend the European Commission to direct more resources to research projects dealing with the problem of fake news, filter bubbles and verification tools, as well as promotion of media literacy.

5.3.4 API Terms & Conditions¹⁵⁵

5.3.4.1 API T&C in REVEAL

Social media allow external developers to access and exploit content or other features of their platform to build applications and services. Developers are required to use the platform’s Application Programming Interface – API – which is a set of functions and procedures designed to allow such access. Every API comes with a number of rules and guidelines, set forth in the platform’s API Terms & Conditions (T&C). When building applications for social media, developers need to abide by the rules specified in the T&C. This is not always an obvious, or an easy step in the process of building an application.

In the REVEAL project the partners have encountered several issues in the attempt to build applications compliant with the API T&C of the social media platforms involved. One of the main discoveries in the project was that there is no exception for research purposes. The REVEAL project looked at the API T&C of Twitter, Facebook and LinkedIn but the problem goes beyond these three platforms.¹⁵⁶

API’s T&C’s constitute a legal agreement between a provider of a social media platform and the developer building an application that will access and use the licensed material of the social medium. The agreement describes the rights, obligations and restrictions as well as provisions on user protection and warranty disclaimers. It covers legal issues related to the access and

¹⁵⁴ Sullivan B., This Guy Built a Fake News Detector, Then Facebook Blocked It, 2.12.2016, <http://motherboard.vice.com/read/an-interview-with-the-guy-whose-fake-news-plugin-was-just-blocked-by-facebook>.

¹⁵⁵ This section is based on a blog post by A. Kuczerawy, The perils of app development – compliance with API Terms & Conditions, 15.11.2016, <https://www.law.kuleuven.be/citip/blog/the-perils-of-app-development-compliance-with-api-terms-conditions/>.

¹⁵⁶ For the full description of the REVEAL project experience with API T&C see deliverable D1.2b - Legal /regulatory requirements analysis - Processing Personal Data from Social Media and Social Media API Terms & Conditions.

exploitation of the social media content as well as technical issues, for example specifying how to display the content or a number of API calls allowed daily. Altogether, they can be quite extensive and spread across more than one document.

The contract is entered into by accession. There is no 'I agree' button or signature. By using the licensed material, the developer agrees to having read, to comply with and be bound by the API T&C. It is, however, very much a 'take-it-or-leave-it' situation. There is no preliminary negotiation process between the developer and the provider of the social medium. If developers disagree with the terms, they simply cannot access or use the licensed material. Moreover, the rules are drafted unilaterally and can be rather vague. For example, not all terms are defined. Some explanation might be provided but it seldom is exhaustive enough to clarify all doubt. By keeping their cards close to their chest, platform providers guarantee they have an upper hand in case of any conflict, since there is no possibility to contest their opinion. Any ambiguities are interpreted to the advantage of the social media provider. This means that the developer's best intentions to comply might not be enough to achieve a satisfactory result.¹⁵⁷

The API T&C, moreover, can change at any time. Most social media providers reserve the right to unilaterally update and modify their terms at their sole discretion. And they do constantly update their T&C from one day to another, often substantially, thereby complicating bona fide compliance by developers. On some occasions social media providers notify developers about the changes, but this is not always the case. A change can be announced through a banner on the developer site, which they are expected to check regularly. It might not be announced at all. Continuous use of the API means the developer agrees with the introduced changes, which can be rather unpredictable.¹⁵⁸ It is possible that developers violate new rules simply because they did not check for changes to the API T&C. It is also possible, that an application that was initially compliant with the API T&C is no longer in compliance.¹⁵⁹ The lack of foreseeability of changes can of course threaten the existence of certain applications.¹⁶⁰ Moreover, it forces developers to constantly re-assess the compliance of the applications with the updated rules. It is possible that certain non-compliant features might need to be dropped completely. Providers of social media platforms usually provide a general warning in the API T&C that any future changes may adversely affect the way in which the application or service communicates with the API or accesses content.

¹⁵⁷ M. Arment, Interpreting some of Twitter's API changes, 16.8.2012, <https://marco.org/2012/08/16/twitter-api-changes>.

¹⁵⁸ A. Phelps, Twitter's API changes will have a real impact on news developers, 17.8.2012, http://www.niemanlab.org/2012/08/twitters-api-changes-will-have-a-real-impact-on-news-developers/?utm_source=Weekly+Lab+email+list&utm_campaign=650bc81e79-WEEKLY_EMAIL&utm_medium=email.

¹⁵⁹ G. Keizer, Facebook's API change severs Microsoft apps from friends' info, 15.6.2015, <http://www.computerworld.com/article/2935627/social-media/facebook-api-change-severs-microsoft-apps-from-friends-info.html>.

¹⁶⁰ J. Rossignol, Third-Party Instagram Apps and Websites Cease to Work, 2.6.2016, <http://www.macrumors.com/2016/06/02/instagram-third-party-apps-websites-dead/>.

And there is nothing that can be done about it. Any indication of non-compliance is a reason for the provider to cut access to the API, at any time, for any reason.¹⁶¹

Consulting API T&C is probably the least favourite part of creating apps or services. Sometimes, it is neglected entirely. It is, nevertheless a step that must be taken, especially in research projects. If ignored, it might backfire causing troubles for developers (or a project) down the road. **We recommend, therefore, developers and research consortia to consult API T&C in the development process. Ideally, API T&C should be looked at from both a legal and technical perspective, jointly,** to ensure a proper understanding of the given rules. The compliance assessment, moreover, is a never-ending process from which the developer can never retire if he wants his application to continue to exist. It is crucial to remember that, at least for now, there is no exception for research purposes. Not complying with the provided rules and restrictions set out in the API T&C is a sure way to the end of every great application.

When online platforms restrict access to content and data by changing their API, it presents real practical issues for app developers. It is not a new problem¹⁶², but so far, it has been largely ignored by policymakers. A first indication that the problem has been spotted can be found in the Communication on the Online platforms and Digital Single Market released earlier this year.¹⁶³ In this document, the European Commission recognizes that *where business models of entire ecosystems of SMEs are dependent on access to a small number of online platforms, (...) new asymmetries may be created*. The obstacle, in such case, could potentially amount to unfair trading practices. Moreover, it could stifle a development of fair and innovation-friendly business environment.¹⁶⁴ The European Commission is currently considering whether EU-level action is needed to address fairness of B2B relations.

5.3.4.2 Digital Single Market Agenda

Between Summer 2016 and Spring 2017, the European Commission is carrying out a fact-finding exercise on B2B practices in the online platform environment which includes a number of studies, stakeholder workshops and in-house research. Studies that are commissioned include a survey of platforms' business users on potentially unfair trading practices and their impact as well as an analysis of e-commerce platforms' standard terms and conditions. As to the workshops, the

¹⁶¹ J. Cook, Instagram made a change that stopped lots of third-party apps from working, 4.6.2016, <http://uk.businessinsider.com/instagram-made-a-change-that-stopped-lots-of-third-party-apps-from-working-2016-6?r=US&IR=T>.

¹⁶² C. Warren, Twitter's API Update Cuts Off Oxygen to Third-Party Clients, 16.8.2016, <http://mashable.com/2012/08/16/twitter-api-big-changes/#VPmzKa1Kskqy>.

¹⁶³ European Commission, Commission Communication to the European Parliament, The Council, The Economic and Social Committee and The Committee of Regions, "Online Platforms and the Digital Single Market Opportunities and Challenges for Europe", Brussels, 25.5.2016

COM(2016) 288 final, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0288&from=EN>.

¹⁶⁴ J. Wagner, Overly Restrictive API Policies Kill Innovation, 16.7.2014, <http://www.programmableweb.com/news/overly-restrictive-api-policies-kill-innovation/analysis/2014/07/16>.

European Commission is organising four invitation-only events on, respectively, platforms' terms and conditions, data, discrimination and transparency.¹⁶⁵ On the basis of the results of this fact-finding exercise, the European Commission will determine by Spring 2017 whether a targeted legislative EU initiative on B2B trading practices in the online platform environment is required.

The state of the art of EU unfair trading law consists of the Unfair Contract Terms Directive¹⁶⁶ and the Unfair Commercial Practices Directive¹⁶⁷ which are only applicable to B2C situations. As a result, there is currently no horizontal, legally binding EU legislation governing B2B relationships.¹⁶⁸ However, a number of Member States have extended the scope of application of national legislation implementing these Directives from B2C to B2B situations.¹⁶⁹ Other Member States already had national provisions in place to protect businesses before the Directives were adopted. One should note in this regard that unfair trading law owes its origin to the B2B relationship. Unfair competition law originated from the Paris Convention for the Protection of Industrial Property as adopted in 1883. Over the years, the objective of some forms of national unfair competition law started to include the protection of the interests of consumers.¹⁷⁰ Even though some Member States may have national legislation in place to protect businesses, **a uniform EU-wide approach is recommended to create a true digital single market in light of the cross-border nature of online platforms.**

It is important to keep in mind that attempts have been made in the past to introduce a horizontal form of protection for businesses at the EU level in the form of the 2009 Draft Common Frame of Reference¹⁷¹ and the 2011 Proposal for a Common European Sales Law.¹⁷² However, both of these

¹⁶⁵ See <https://ec.europa.eu/digital-single-market/en/business-business-trading-practices>.

¹⁶⁶ Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts (Unfair Contract Terms Directive) [1993] OJ L 95/29.

¹⁶⁷ Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market (Unfair Commercial Practices Directive) [2005] OJ L 149/22.

¹⁶⁸ Sector-specific B2B contractual protections at the EU level include Directive 2011/7/EU of the European Parliament and of the Council of 16 February 2011 on combating late payment in commercial transactions (recast), OJ L 2011, 48/1 and Directive 2006/114/EC of the European Parliament and of the Council of 12 December 2006 concerning misleading and comparative advertising [2006] OJ L 376/21.

¹⁶⁹ For a discussion in the context of the food supply sector, see Report from the Commission to the European Parliament and the Council on unfair business-to-business trading practices in the food supply chain, 29 January 2016, COM(2016) 32 final, p. 3-6.

¹⁷⁰ For a more elaborate discussion, see J. Stuyck, 'Briefing Paper on Addressing unfair commercial practices in business-to-business relations in the internal market', commissioned by the European Parliament's Committee on Internal Market and Consumer Protection, May 2011, p. 8-11, available at [http://www.europarl.europa.eu/RegData/etudes/note/join/2011/457364/IPOL-IMCO_NT\(2011\)457364_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/note/join/2011/457364/IPOL-IMCO_NT(2011)457364_EN.pdf).

¹⁷¹ Principles, Definitions and Model Rules of European Private Law. Draft Common Frame of Reference (DCFR), 2009, available at http://ec.europa.eu/justice/contract/files/european-private-law_en.pdf.

¹⁷² Proposal for a Regulation of the European Parliament and of the Council on a Common European Sales Law, 11.10.2011, COM(2011) 635 final.

attempts were subject of intense debate and ultimately failed to incorporate binding standards in EU law. The Draft Common Frame of Reference is regarded as a source of guidance and inspiration constituting an instrument of ‘soft law’, while the Proposal for a Common European Sales Law was withdrawn by the European Commission.

Even though previous attempts to create horizontal, legally binding protection for businesses have failed at the EU level, such a form of regulation applicable to businesses in all sectors would be the most effective way to remedy some of the problems identified in the REVEAL project. In particular, clauses amounting to a far-reaching right to unilaterally modify contractual agreements without notice and at the sole discretion of the provider may also occur outside the online platform environment and be equally problematic for businesses operating in other markets. As such, **a possible approach would be to put them on a list of B2B contract terms that are to be considered as unfair and thus void in all circumstances.** In the B2C context, the Unfair Contract Terms Directive includes an Annex which stipulates in a non-exhaustive and merely indicative way certain terms that may be considered unfair. However, this light-touch approach has led to a large degree of disparity across the Member States which can be deemed problematic in the strive towards the creation of a single EU internal market. Contrary to the Unfair Contract Terms Directive, the Unfair Commercial Practices Directive does include a strict black list. The commercial practices mentioned in this list annexed to the Directive are in all circumstances considered unfair. Again, such a black list on the EU level currently only exists for B2C situations.

Since the European Commission seems to consider the introduction of possible initiatives specific to online platforms, another sector which can be mentioned in this regard is the food supply chain. Since many years there has been a discussion about the need to protect businesses against unfair trading practices in the food sector. The European Commission in its report in January 2016 concluded against this and instead favoured the strengthening of a voluntary scheme agreed by stakeholders (the Supply Chain initiative¹⁷³).¹⁷⁴ However, this discussion continues following the call for legislation in June 2016 by the European Parliament.¹⁷⁵ If the European Commission similarly deems the adoption of legislation in the online platform environment unnecessary, **it could at the very least encourage the establishment of a non-regulatory initiative among relevant stakeholders** as it has done in the context of the food supply chain.

5.3.5 Conclusion

The REVEAL project provided a great opportunity for interesting legal analysis. It allowed for examination of legal questions in several areas, such as privacy and data protection, liability of intermediaries, media law and freedom of expression and compliance with API T&C's. All these

¹⁷³ See <http://www.supplychaininitiative.eu/about-initiative>.

¹⁷⁴ Report from the Commission to the European Parliament and the Council on unfair business-to-business trading practices in the food supply chain, 29 January 2016, COM(2016) 32 final.

¹⁷⁵ European Parliament resolution of 7 June 2016 on unfair trading practices in the food supply chain, available at <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2016-0250+0+DOC+XML+V0//EN>.

aspects of the project have been examined thoroughly to ensure compliance of REVEAL with the European legal framework.

This section of the deliverable provided an overview of the main legal issues encountered in the project. It presented the various legal issues and solutions that were implemented to make sure REVEAL does not infringe upon any third parties' rights. To ensure that the individuals' rights are not disproportionately interfered with REVEAL introduced specific measures, such as REVEAL forms to request erasure of personal data and to request removal of infringing content. Moreover, REVEAL remained open and transparent about the conducted activities and provided extensive information in the REVEAL Privacy Policy and our Terms of Use. REVEAL also complied with all the formal requirements related to the processing of personal data, such as consultation with and notification to the national (Greek) Data Protection Authority. The findings of the legal research were consulted with and approved by the REVEAL Ethical Board.

The adopted solutions were evaluated from the legal perspective which allowed us to provide legal recommendations for policy makers and other stakeholders. Our recommendations addressed the topics examined in REVEAL, that is, privacy and data protection, intermediary liability, media and freedom of expression and, lastly, compliance with the API T&C's. The articulated recommendations are mainly directed to the policy makers such as the European Commission. The recommendations focus mainly on the importance of clarification of rules, for example provisions of the new data protection regulation (GDPR), as well as the need to strengthen protection of rights, freedoms and democratic values in the EU, in the context of the Digital Single Market Strategy initiative. For example **we recommend introducing safeguards for freedom of expression in the intermediary liability regime, and avoiding solutions that lead to privatized enforcement of online content.** We also **recommend maintaining prohibition of general monitoring obligations and adopting the necessary rules to ensure independent and professional oversight of media markets.**

I. Appendix – Journalist and Enterprise Applications: Summary of Issues and Suggestions and responses to these

This section shows a summary of issues detected during the formative evaluation, and suggestions to how the project may respond to overcome these issues and the status for this response combined with comments.

| # | Issue | Suggestion | Comments | Pri. | Status |
|---|--|---|--|------|-----------------------------|
| 1 | Facebook is just as important as Twitter. However, the mock-up is mainly set up to support Twitter, paralleling the structure of TweetDeck. This implies an underlying challenge (not discussed by the participants): Is the structuring and verification of Facebook content sufficiently supported in the mock-up? | This issue may require considerations on several levels. Address the issue of search for content. | Facebook is supported by the crawler and most analysis modules, although restrictions from the Facebook API make it limiting | High | DONE |
| 2 | Currently, searching for topics is well supported. It is uncertain whether searching for content from specific persons or groups is sufficiently supported. | Support empty searches in content from a specified list of persons. This requires that empty searches are allowed and the possibility to label stream headings according to groups of people. | This is supported in the crawler options for Facebook | High | DONE |
| 3 | Instagram and Youtube are also important to journalists. It is uncertain whether the current design of streams support the presentation of content from these services. | Conduct rapid prototyping to identify how different types of social media content should be presented in the streams, particularly how content including images or video should be presented. | These are supported by the media crawler and the relevant content is presented through the multimedia collections of each stream | High | DONE |
| 4 | Finding details on the source and contact information is important when using social media as a case hub. The mock-up provides this information, but only as part of the verification process. | Make information on the source easily available directly from the social media content in the stream. | This has been discussed with the users in the consortium and it has been decided that it is more practical to provide information on the source under the verification 'tab' as there are a lot of modules that provide such information | High | DONE under verification tab |

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| 5 | Social media content may provide a biased view of the public opinion, as those who comment in social media may differ from those who do not. It may also be relevant to be able to assess whether opinions voiced are controversial. | Consider whether the REVEAL application could include modules for assessing the generality of social media comments, or the degree to which they are controversial or not. | Controversiality is examined by the 'TruthNest/Context/Diversity' metric for Twitter posts and by the 'Popularity Prediction' module for uTube content | Low | DONE |
| 6 | Verification in social media may be engaging, but journalists may need triggers to see that verification in social media can be more than merely a necessary routine. The REVEAL application holds potential to make verification engaging, but this potential is not fully realized. The user is not given any triggers to actually engage in verification or look up examples of interesting verification. | Provide triggers to engage with verification work on the main page, for example by listing recent verifications, recent verification challenges, top verification contributors and trending topics in particular need of verification. | This functionality can be realised with user management. Although this was foreseen as a concept it was later found that although it is technically realisable the resources necessary to cover it adequately would be better spent integrating more research driven functionalities. This will be a target for a post-project commercial version. | High | Not Applicable |
| 7 | Journalists seem typically to use classical approaches to verification, possibly including a mix of general purpose social media services, for cross checking and verification rather than specialized verification tools. | Need to design REVEAL to easily blend in with the way journalists work with verification. In particular, it will be necessary to design for journalists not always using REVEAL for verification. | The UI modularity allows easy integration of 3 rd party tools (as done for TruthNest and FakePost detector). The verification checklist also allows for manual entry of results coming from external tools | Medium | DONE |
| 8 | Current journalism education does not provide sufficient training concerning verification in social media. This holds potential for the REVEAL application. | Consider including institutions of journalism education and journalism teachers as a target user group of the REVEAL application. | DW has already carried out verification training workshops with journalists. | Medium | DONE |
| 9 | While complex setup for streams is appreciated in some contexts, the participants also reported the need for a simple setup process for streams. | Make it possible to add streams without other input from the journalist than just the search term. | The Add Stream form has been simplified | High | DONE |
| 10 | Easy setting up of streams also | Make it possible to | | High | DONE |

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| | requires the easy deletion of streams, as the journalists then will need to easily discard non-useful streams. | easily delete non-useful streams, for example as a visible delete-option in the stream heading. (This, however, requires some kind of warning before deleting streams that has been configured more than just providing the search term.) | | | |
| 11 | The context of use is decisive for whether or not it is useful to have content from several social media services in the same stream. | Make the filtering of content on the basis of social media services immediately available for each stream. | Keyword filtering has been added. Different sources in the same stream was not possible, due to differences in the content structure | High | Not Applicable |
| 12 | The context of use is decisive for whether or not it is useful to present top content or all content in a stream. | Make toggling between top/all content immediately available for each stream. | It is not possible to rank content based on popularity, as all interactions occur after the instance of crawling | High | Not Applicable |
| 13 | It is important for journalists to get an overview of top content, but it may be challenging to determine the criteria for top content for each social media service. | Provide a default definition of top content for each social media service supported, for example on the basis of the relative number of interactions in a given time interval. | It is not possible to rank content based on popularity, as all interactions occur after the instance of crawling | High | Not Applicable |
| 14 | For some contexts of use, it may be useful to exclude content from news agencies. | Include a search criterion where it is possible to filter out news agencies, such as AFP (something that may already be thought of in the "Source/By" filter). | Supported by the crawler but omitted for UI simplification purposes | Medium | Not Applicable |
| 15 | For some contexts of use, it may be useful to have easy access to the translation of content. | Consider whether to provide an easy translation option, for example as a "translate" button for each social media content in the stream. | For this a 3 rd party service should be employed. It can be considered in the commercial version | Low | Not Applicable |
| 16 | Trending topics are important for journalists when using social media as a news hub. Trending | Include trending topics as a supplement to defined streams. | This is out of the scope and capabilities of the | High | Not Applicable |

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| | topics are currently not supported in the mock-up. | Visually, this could be presented as a list immediately below list of streams in the right hand panel. | project | | |
| 17 | It will be important to support the easy exploration of trending topics. | Support the exploration of trending topics the same way as streams, by dragging these to the main panel. Require the easy, optional saving or deletion of the stream following exploration. | This is out of the scope and capabilities of the project | High | Not Applicable |
| 18 | The concept of stories is not intuitive, particularly regarding whether stories are something to be published or not. | Consider changing the name of stories to something more accurately describing the function, for example "collections". | It has been changed to "collections" | Medium | DONE |
| 19 | Marking content as interesting by dragging and dropping it to a story may be too cumbersome. | Consider whether the user should be able to tag content as interesting just by marking it directly in the stream. | Can be applied in the commercial version when multi-user will be possible | High | Not Applicable |
| 20 | Some (or most?) stories may overlap with their corresponding stream. For example, a story on Charlie Hebdo may include only content from the stream on Charlie Hebdo. This implies a maintenance challenge, where the user needs to set up and maintain both a stream and a story on the same topic. | The user should not have to set up a story to overview content marked as interesting in a particular stream. Rather, content marked as interesting in a particular stream could be displayed in the same way as content in a story, for example by clicking on the stream heading. | Stories have been renamed to collections to highlight their meaning | High | DONE |
| 21 | It is problematic if content that is marked as interesting or dragged into a story is later modified or deleted by the source (or others). A record or the original is needed. | Whenever content is marked as interesting or dragged into a story, an as-is record of the content should be stored and made easily available to the user. | We are obliged by the legislation to delete whatever content is deleted at each source | High | Not Applicable |
| 22 | A key means of verification for social media content is checking and contacting the source. (This may often be the only means of verification for the content; | Make information on the source easily available directly from the social media content in the stream | Answered in #4 | High | DONE |

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| | hence, an in-depth verification process in the REVEAL application may not be needed for this purpose.) | (as in suggestion #4). | | | |
| 23 | The need for verification and the process of verification will be diverse depending on the context, the journalist and the newsroom. However, most journalists are likely to require a fast and easy verification process. | Support a flexible verification process. Allow for most social media content not to be formally verified, and for very brief verification processes (for example as in the off-line contacting of a source). | The verification checklist allows every journalist to follow their own process, either fast or elaborate | High | DONE |
| 24 | Verification in social media may require particular competence, which is not held by all journalists. | Need to make it easier for journalists to request the help of competent personnel or experts for particular verification challenges. | This could be made possible in the commercial version when user based access will be activated | Medium | Not Applicable |
| 25 | The verification of images may be supported by seeing other images from the same location at the same date/time. | Module for showing images from the same data/location as the target image. | This is provided by the geo-location module | Low | DONE |
| 26 | There may be ethical issues connected with the publication of social media content. It could be useful to make an optional note of this as part of the verification checklist. | Consider including "ethical questionable" as a classification possibility, on the same level as "profanity", "graphical" or "copyright issues". | This was not considered necessary by DW who are responsible for the verification checklist | Low | Not Applicable |

Enterprise Application: Summary of Issues, suggestions and planned actions

| # | Issue | Suggestion | Comments | Pri. | Status |
|---|---|--|--|----------|--------|
| 1 | Enterprise workers engage in several different social media services. There is a need for more social media services. | Include social media services, such as LinkedIn, Facebook etc. into the functionality | Twitter was also included. LinkedIn does not allow access | High | DONE |
| 2 | Community managers and product managers need to find and identify influencers in an efficient way. This was regarded as very important. | The functionality of the application should include "finding influencers" as a main feature. Make the functionality visible. | This has been made more prominent behind the tab 'top users' | High | DONE |
| 3 | Community managers and | The newbie scenario | This was changes into | Moderate | DONE |

| | | | | | |
|---|---|---|---|----------|------|
| | product managers do not find the newbie scenario relevant for their work. | should be considered to be taken out. | a functionality for finding users | | |
| 4 | Community managers and product managers struggle in separating internal and external communication. | Functionality that makes it possible for the user to filter between external and internal communication. | Different streams are provided for internal (SAG) and external (twitter, etc) content | Moderate | DONE |
| 5 | Community managers and product managers do not understand the purpose of the application. | Features and design in the interface that make the purpose of the application clearer. This could be presented as some key activities on the front page of the application. | Several changes were applied to make the application more clear, as adding more representative tabs (top users, top posts, etc) | High | DONE |
| 6 | Community managers and product managers found the usability of the application poor, and they were struggling to find key functionality | Make the application simpler, with a high focus on usability. Key functionality should be highlighted in the interface. Try to avoid unnecessary information. | As in #5 | High | DONE |
| 7 | The button “share” was regarded as too powerful in relation to its importance (see Figure 14). | Include a bookmark feature. | The share button has been removed | Moderate | DONE |
| 8 | The participants were confused by the meaning of the different labels. | The labels for different features used in this application should be revisited and tested. Typically, "contributor" should be changed to "influencers", which is the more common labelling in the user group. | Almost all labels were revisited | High | DONE |
| 9 | Who are the key target groups and/or key activities for this application? Innovation gathering or customer support? | Customer support should be clearly separated from innovation gathering in the design — maybe the interface should have two different avenues on the front page of the application? | Changes in the UI (as described in #5) have been applied to make the use of the application more understandable | High | DONE |

| | | | | | |
|----|---|--|--|------|----------------|
| 10 | The streams seem to work better for people working for customer support than innovations. | Consider skipping the streams and focus on how to find influencers. | The analysis is done within streams (to find influencers or any other parameter) so skipping streams is not technically possible | High | Not Applicable |
| 11 | The design is not motivating for use. | A new and fresher design solution is required to make the interface more attractive. | Several changes were made, but a major UI redesign should be a task for the commercial version | High | DONE |